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ABSTRACT

The National Assessment of Educational Progress (NAEP) is a congressionally mandated survey of educational achievement of what American students know and can do, it also includes a yardstick that can be used to evaluate that performance. Results, presented here for the states and the nation, indicate that just over 60 percent of the students in grades 4, 8, and 12 are performing at or above the basic level on the 1990 NAEP Mathematics Assessment. Less than 20 percent of the students in these three grades reach proficient level or beyond. The percentage of students at or above the advanced level ranges from 0.6 percent in grade 4 to 2.6 percent in grade 12. Over one-third of the students assessed did not reach the lowest level adopted by the Board. The introduction describes NAEP and explains the reasons for setting of the new achievement levels. The document is subsequently divided into three chapters. Chapter 1 describes the levels and provides test items and corresponding results at different grade levels. Chapter 2 reports the overall results for the nation by grade, gender, race or ethnicity, community type, parents education, and school type, and semesters of high school math for grade 12. Chapter 3 provides the same information for grade 8 in each state. (MDH)

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National Assessment Governing Board

The LEVELS of Mathematics Achievement

Initial Performance Standards for the 1990 NAEP Mathematics Assessment

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Volume I
National and State Summaries

SE052 986

Prepared by Aspen Systems under contract with the National Assessment Governing Board

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What is The Nation's Report Card?

THE NATION'S REPORT CARD, the National Assessment of Educational Progress (NAEP), is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history/geography, and other fields. By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP is an integral part of our nation's evaluation of the condition and progress of education. Only information related to academic achievement is collected under this program. NAEP guarantees the privacy of individual students and their families.

NAEP is a congressionally mandated project of the National Center for Education Statistics, the U.S. Department of Education. The Commissioner of Education Statistics is responsible, by law, for carrying out the NAEP project through competitive awards to qualified organizations. NAEP reports directly to the Commissioner, who is also responsible for providing continuing reviews, including validation studies and solicitation of public comment, on NAEP's conduct and usefulness.

In 1988, Congress created the National Assessment Governing Board (NAGB) to formulate policy guidelines for NAEP. The board is responsible for selecting the subject areas to be assessed which may include adding to those specified by Congress; identifying appropriate achievement goals for each age and grade; developing assessment objectives; developing test specifications; designing the assessment methodology; developing guidelines and standards for data analysis and for reporting and disseminating results; developing standards and procedures for interstate, regional, and national comparisons; improving the form and use of the National Assessment; and ensuring that all items selected for use in the National Assessment are free from racial, cultural, gender, or regional bias.

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National Assessment Governing Board

The LEVELS of Mathematics Achievement

Initial Performance Standards for the
1990 NAEP Mathematics Assessment

Volume I
National and State Summaries

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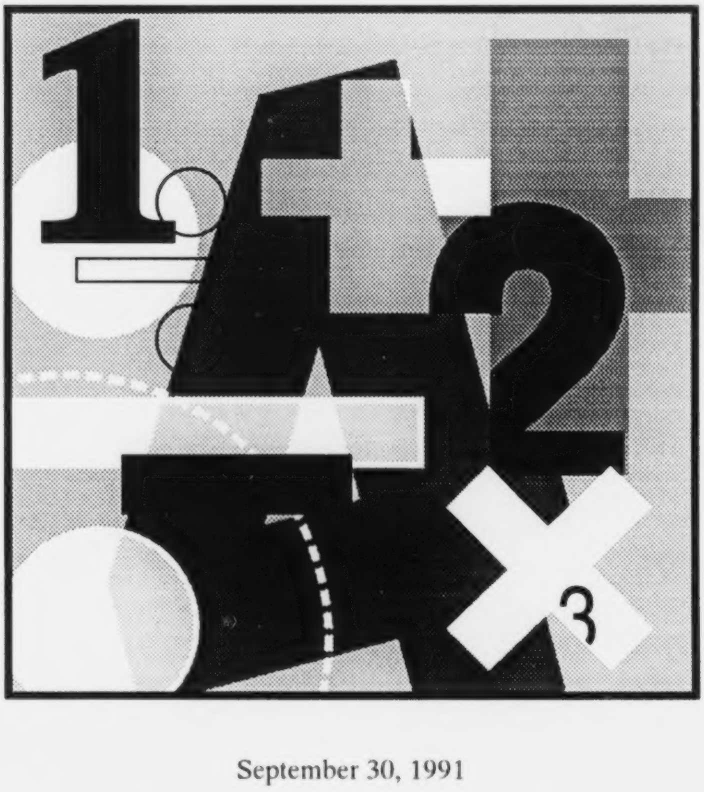

September 30, 1991

Prepared by Aspen Systems under contract with the National Assessment Governing Board

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The States participating in the initial NAGB performance standards project are listed alphabetically in both volumes of this Report. Copies are available from the individual participating States, as well as from the National Assessment Governing Board, while supplies last. Write:

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Prepared by Aspen Systems under contract with the National Assessment Governing Board.

Foreword

This report marks a major milestone in the evolution of the National Assessment of Educational Progress (NAEP). For the first time, with the mathematics achievement levels it presents, the Assessment not only describes what American students know and can do; it also includes a common yardstick--readily understood--that can be used to evaluate whether that performance is good enough for our students and our nation to flourish.

In 1988, when Congress created the National Assessment Governing Board (NAGB) to set policy for NAEP, it made the Board responsible for identifying "appropriate achievement goals" for each grade and subject that NAEP tests. This was intended to be a break from past practice shared by NAEP with virtually all other achievement tests. In the past, the Assessment reported averages; it showed distributions; it charted trends; but it conveyed no standards or goals. As a matter of policy, it offered no clear definitions of what achievement *ought to be*. It contained no standard of good performance. Now it does.

The levels were adopted by the Board NAGB--after careful deliberation and listening to a great deal of advice--for use in interpreting results of the 1990 National Assessment of mathematics. Briefly, the achievement levels are standards, describing what students should know and be able to do on NAEP at grades 4, 8, and 12, the three grades surveyed by NAEP's representative-sample tests.

For each of these grades, the Board has adopted three achievement levels. The *proficient level* is central, defining solid grade-level performance that demonstrates competency in challenging subject matter--a formulation deliberately incorporated from the National Education Goals. The *basic level* for each grade denotes partial mastery of fundamental knowledge and skills. The *advanced level* signifies superior performance.

The detailed definitions of these mathematics achievement levels are presented in this report. They are illustrated by sample problems and expressed as proficiencies on the NAEP scale. For each level we also report the proportion of students in NAEP's 1990 sample survey that have met or exceeded the standard.

The Board is a suitable vehicle for setting achievement standards on NAEP. Its 24 members include local, state, and federal officials, educators from all parts of the country, and members of the general public. It is an independent Board by statute and disposition.

By adopting achievement levels for the 1990 assessment of mathematics, the Board has made it possible for the first time for educators, policy-makers, parents, and other interested citizens to interpret NAEP results according to common standards. Of course, these standards are judgments, as all standards must be. They represent the Board's best judgment, informed by the advice of many others. They do not necessarily represent a national consensus. However, the mathematics assessment to which they apply derives from a broad participatory process. The levels were adopted after careful deliberation, lively debate, and considerable advice from teachers, test experts, and the public. The Board members themselves have a broad range of experience, interest, and expertise.

For several reasons these achievement levels will make NAEP results more informative than they have been in the past:

- The defining language of the proficient level for each grade intentionally corresponds with the National Education Goal for student achievement, set by the President and the nation's Governors. Thus, NAEP's usefulness for tracking progress toward that goal is enhanced greatly.

- Having three levels for each grade permits far closer monitoring of student performance. This will direct attention and effort not just toward proficient achievement, but also toward students with the greatest need for improvement and also toward those who are near "world class" performance.

- The achievement levels will assist states to set their own targets for academic improvement. As NAEP is repeated in future years, states will be able to monitor their own progress in relation to these levels and targets.

Thus, as the policymaking board for the nation's only regular, representative report on student achievement, NAGB has set out to help track progress toward Goal 3 of the National Education Goals. It has sought to give meaning to the phrase "competency in challenging subject matter" by developing clear, specific definitions for proficient achievement that firmly reflect this standard. As we completed our work on these mathematics achievement levels, we received encouragement from the National Education Goals Panel. At their request, we are releasing this report on the same day as their own.

This effort is a trial. It will be reviewed carefully before NAEP mathematics results are reported for 1992. Utilizing the same general definitions of basic, proficient, and advanced, the Board also plans to set achievement levels for the 1992 assessments in reading, writing, and again in mathematics. By 1994, the Board will also set standards for the new NAEP assessments in science, U.S. history, and geography, thus attending to all of the subjects named in Goal 3 of the National Education Goals.

These achievement levels describe a common core of mathematics learning that is important for all American children to acquire. They certainly do not prescribe how major topics should be taught. Indeed, by setting performance standards rather than presenting a curriculum guide or detailed procedures for teaching, we wish to encourage the initiative of teachers and schools, of local school boards, and states in devising different means to reach common ends. This is, in fact, quite the opposite of the pattern in many places where class time and lessons are prescribed but how much should be learned is left unstated.

Over the past century, American education has evolved into a vast and complex system. Unfortunately, in too many respects it has become a structure without a framework and the academic results as documented by NAEP have been disappointing. This year, NAEP has provided the first comparable, representative data on achievement in the different states, a program that must surely expand to fulfill the need for fair and accurate information on the outcomes of American education.

The achievement levels on NAEP are standards for judgment and encouragement, not edicts or commands. We believe they will make National Assessment results far more understandable to educators and the public. Hopefully, these standards will also function as a focus of effort and as a spur to reform. We believe the use of achievement levels for reporting NAEP results will help move this nation to examine seriously the state of our schools and to take decisive action toward improvement.

Richard A. Boyd
NAGB Chairman

Executive Summary

The National Assessment Governing Board (NAGB) has established new standards for reporting the results of the National Assessment of Educational Progress (NAEP). This effort, part of the Board's congressionally mandated responsibilities, resulted in three achievement levels: basic, proficient, and advanced. The basic level denotes partial mastery of the knowledge and skills fundamental for proficient work at each grade. Proficient, the central level, represents solid academic performance and demonstrated competence over challenging subject matter. The advanced level signifies superior performance beyond proficient.

Under the Board's direction, an elaborate standard-setting process was employed to adapt these definitions of achievement to the subject matter and content of the 1990 Mathematics Assessment. This process incorporated the views of a broadly representative body of teachers, test experts, administrators, and interested members of the public. The initial application of these standards to the 1990 Mathematics Assessment and the Trial State Assessment marks a significant departure from prior practice. Previously, NAEP results have only been reported in terms of statistical profiles. Now, for the first time on the national level, the Board's new standards allow NAEP data to be reported in terms of what students *should* be able to do.

Results, presented for the first time in this report, indicate that just over 60 percent of the students in Grades 4, 8, and 12 are performing at or above the basic level on the 1990 NAEP Mathematics Assessment. Less than 20 percent of the students in these three grades reach the proficient level or beyond. The percentage of students at or above the advanced level ranges from 0.6 percent in Grade 4 to 2.6 percent in Grade 12. Over one-third of the students assessed did not reach the lowest level adopted by the Board.

There are variations in NAEP mathematics performance by gender, race/ethnicity, type of community, parental education, and (for Grade 12 students) number of mathematics courses taken. Generally, similar patterns are found for the nation as a whole and for participating states from the Trial State Assessment.

The percentage of males reaching the proficient and advanced levels in Grade 12 is greater than the percentage of females. Similar percentages of males and females, however, reach each achievement level in Grades 4 and 8.

Asian/Pacific Island students are more likely to reach the basic and proficient levels than are students from other race/ethnic groups. Whites have the second highest percentages at or above these same two achievement levels, significantly behind the Asian/Pacific Islanders, but above the other minority groups.

Students from disadvantaged urban communities are less likely to reach the basic level in Grades 4 and 8 than students from other types of communities. The percentage of students from extreme rural communities reaching the basic and proficient levels is above that for students from disadvantaged urban communities, but below that of students from advantaged urban communities.

The percentage of students at or above the basic and proficient achievement levels is also related to parental education. Students with the most educated parents are more likely to reach the basic and proficient levels in Grades 4, 8, and 12.

For Grade 12 students, there is a strong relationship between the number of high school mathematics courses taken and performance on NAEP. The percentage of students at or above the basic and proficient levels increases directly with the number of semesters of high school mathematics.

The significant (and sometimes substantial) diffferences across groups, however, are largely variations on a theme. Even in the most successful demographic groups, the majority of the students do not meet the performance standards set for the proficient level and only a small fraction of the students reach the advanced level. The failure of the students to reach the performance standards set by a broad-based group of citizens is not a phenomenon limited to isolated groups of students but, rather, a reflection of the performance of all segments of the population.

These findings, indicating that many students are not performing as well as they should be, are both revealing and diagnostic. As a result of the Board's actions, data and standards are now available for those seeking to make change. In addition to the information on the nation and participating states presented in this volume, state-level performance data for individual assessment items are presented in an accompanying volume.

The development and application of performance level standards represents an initial effort. These processes have been, and will continue to be, carefully evaluated by the Board and others. The Board remains committed to the use of performance level standards and will be continuing these activities in connection with future administrations of NAEP, including the assessments of mathematics, writing, and reading scheduled for 1992.

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Introduction:

Performance Standards for NAEP

The Nation's Report Card

For more than two decades, the congressionally-mandated National Assessment of Educational Progress (NAEP) has provided information on what American students know and can do. In its earlier stages, NAEP assessed nationally representative samples of students on an annual basis. More recently, assessments have been made every 2 years. Since 1988, NAEP has been directed by Congress to assess mathematics and reading every 2 years, writing and science every 4 years, and history/geography at least once every 6 years.

Also known as the Nation's Report Card, NAEP has produced more that 200 reports spanning 11 subject areas. Data from NAEP are reported for the nation as a whole and by region of the country, gender, racial/ethnic group, parental education, community type, and other variables associated with student achievement. Results from NAEP are now reported for representative samples of students in grades 4, 8, and 12, as well as for ages 9, 13, and 17. NAEP results are not, however, reported for individual school systems, schools, or students.

Policy for NAEP is set by the National Assessment Governing Board (NAGB). Created by Congress in 1988, the Board is broadly representative, composed of elected officials, educators, and members of the public. As prescribed by law, the Board includes two governors (or former governors) and two state legislators on a bipartisan basis; two chief state school officers; one school superintendent; three classroom teachers; one state and one district school board member; two testing and measurement experts; two school principals; two curriculum specialists; one business or industry representative; one representative of private schools; three members of the general public, including parents; and the Assistant Secretary for Educational Research and Improvement (non-voting/ex-officio). The Board is responsible for selecting the subject areas to be assessed; developing assessment objectives and test specifications; designing the assessment methodology; setting guidelines and standards for data analysis and for reporting and disseminating results; developing standards and procedures for interstate, regional, and national comparisons; improving the form and use of the National Assessment; ensuring that all items selected for use in the National Assessment are free from racial, cultural, gender, or regional bias; and identifying appropriate achievement standards for each age and grade. This last responsibility is the principal basis for this report.

The Mandate for Change

Throughout its history, NAEP reports have only described how students performed and have not provided standards for interpreting how students should have performed. Early NAEP reports listed the percentage of students giving correct answers to each test item and, more recently, NAEP reports have presented results on a proficiency scale from 0 to 500. The 1990 national assessment report issued by the National Center for Education Statistics on June 6, 1991, for example, reports four levels of proficiency indicated by scale scores of 200, 250, 300, and 350.[1] Mathematical skills and behaviors are presented for each proficiency level to illustrate what students at that level are likely to know that students at the next lower level do not. A proficiency at any given level indicates performance relative to students in the population. The current scale is based on the distribution of results in the population, not on any judgments of how much students *should* know or be able to do.

An alternative to this approach involves the use of external standards to interpret the NAEP results. In the Board's view, this approach is far preferable. Descriptions of what students *should* be able to do, based on a set of established criteria, provide an important perspective on student performance. Student performance can then be evaluated not only in relation to other students, but also in light of standards created by experienced educators, policymakers, and informed judges.

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[1] Ina V. S. Mullis, John A. Dossey, Eugene H. Owen and Gary W. Phillips (1991) *The STATE of Mathematics Achievement: NAEP's 1990 Assessment of the Nation and the Trial Assessment of the States*, Washington, DC: National Center for Education Statistics.

When Congress established NAGB in 1988 to set policy for NAEP, it charged the Board with responsibility for "identifying appropriate achievement goals for each age and grade in each subject area to be tested under the National Assessment." After extensive review, consultation, and discussion, in May 1990 the Board unanimously adopted a plan to set achievement levels, defining what students ought to know at each grade level assessed by NAEP (4th, 8th, and 12th). The levels would be established on a trial basis in conjunction with the 1990 mathematics assessment. Assuming that establishing achievement levels proved feasible and useful, the Board resolved that, starting in 1992, *all* assessment results shall be reported primarily in terms of these achievement levels rather than in the previous formats.

In setting achievement levels for the 1990 Mathematics Assessment, NAGB has made it possible for parents, teachers, and policymakers to use a common standard for interpreting performance on NAEP. This report presents the results of the 1990 Mathematics Assessment using the achievement levels adopted by the Board. In subsequent chapters, the results are displayed for the nation as a whole, major subpopulations, and states. Before presenting the findings, however, the process is outlined by which the achievement levels were developed.

Setting Achievement Levels

When the Board adopted the policy that NAEP results will be reported in terms of the quality of student achievement, its goal was to define levels of learning that were tied to a common body of knowledge and skills that ought to be attained by all students, regardless of family income, ethnic background, or type of community. The Board chose to develop three achievement levels for each grade: basic, proficient, and advanced. Rather than focusing only on the most advanced students or defining a minimal level of achievement, the Board wanted to provide standards for assessing a broad spectrum of performance. Performance at the *Basic* level denotes partial--but incomplete--mastery of the knowledge and skills that are fundamental for proficient work at each grade level. The central level, called *Proficient*,

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represents solid academic performance at each grade level tested. This level intentionally corresponds to the National Education Goal for student achievement (Goal 3), set by the President and the nation's governors. Achievement at the *Advanced* level signifies superior performance at the grades tested. Full definitions of these levels are presented in Table 1. The levels are cumulative and students reaching the proficient level have exceeded those standards for the basic level. Similarly, students reaching the advanced level have surpassed the standards for basic and proficient.

Under the Board's direction, these standards were applied to the 1990 NAEP Mathematics Assessment. Table 2 presents the percentage of correct responses and scale score metric. The percent correct indicates the proportion of items students must answer correctly to reach each level, as determined by the judges during the standard-setting process. The percent correct scores were then converted to an equivalent scale value on the 1990 NAEP mathematics scale.[2] These "transformed percent correct scores" were then used to describe the performance of students in the basic, proficient, and advanced achievement categories.

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[2] For a full description, see Eugene G. Johnson (1991) "Defining Levels on the 1990 Mathematics Composite," paper presented at the American Educational Research Association 1991 Annual Meeting.

TABLE 1

Definitions of Achievement Levels

Basic. This level, below proficient, denotes partial mastery of knowledge and skills that are fundamental for proficient work at each grade--4, 8, and 12. For 12th grade, this is higher than minimum competency skills (which normally are taught in elementary and junior high schools) and covers significant elements of standard high-school-level work.

Proficient. This central level represents solid academic performance for each grade tested--4, 8, and 12. It reflects a consensus that students reaching this level have demonstrated competency over challenging subject matter and are well prepared for the next level of schooling. At grade 12, the proficient level encompasses a body of subject-matter knowledge and analytical skills, of cultural literacy and insight, that all high school graduates should have for democratic citizenship, responsible adulthood, and productive work.

Advanced. This higher level signifies superior performance beyond proficient grade-level mastery at grades 4, 8, and 12. For 12th grade, the advanced level shows readiness for rigorous college courses, advanced technical training, or employment requiring advanced academic achievement. As data become available, it may be based in part on international comparisons of academic achievement and may also be related to Advanced Placement and other college placement exams.

Table 2

Mathematics Proficiency Corresponding to Each Achievement Level By Grade For 1990 NAEP Mathematics Assessment

GRADE ACHIEVEMENT LEVEL	PERCENT CORRECT*	MATHEMATICS PROFICIENCY*
Grade 4		
Basic	45	207
Proficient	68	245
Advanced	87	283
Grade 8		
Basic	48	255
Proficient	72	295
Advanced	89	336
Grade 12		
Basic	47	282
Proficient	73	330
Advanced	88	358

* The percent correct is the proportion of items that students should answer correctly in order to reach each level. The percent correct scores were then transformed to the proficiencies on the new NAEP mathematics scale used to produce the statistical summaries.

The process and procedures used to develop these achievement levels for mathematics are described in Chapter 1. Chapter 2 presents the national results in terms of these standards, while Chapter 3 contains the results for participating states.

Chapter One

NAEP Achievement Levels for the 1990 NAEP Mathematics Assessment: Procedures and Outcomes

1990 Trial State Assessment

During the 1980's, criticism of school performance became widespread and reform efforts burgeoned. The National Commission on Excellence in Education published *A Nation At Risk*, in 1983, documenting the low level of performance of American students and touching off a wave of reform efforts. In 1987, then Secretary of Education William J. Bennett appointed a national study group chaired by then Governor Lamar Alexander and H. Thomas James, President Emeritus of the Spencer Foundation. This panel suggested ways of improving the process by which NAEP assesses student achievement. One of its chief recommendations was that NAEP begin to gather comparable, state-level data on student achievement. Legislation incorporating this and many other of the Alexander/James recommendations were submitted by the Administration to Congress in 1987. In 1988, Congress enacted legislation authorizing the Trial State Assessment Program as a part of Public Law 100-297.

The Trial State Assessment Program is a voluntary demonstration project consisting of two parts: an assessment of eighth-grade mathematics in 1990 and an assessment of fourth- and eighth-grade mathematics plus fourth-grade reading in 1992. In 1990, public-school students in 37 states, the District of Columbia, Guam, and the Virgin Islands participated in the Trial State Assessment Program.

Participants in the 1990 NAEP Trial State Assessment Program

- Alabama
- Arizona*
- Arkansas
- California
- Colorado
- Connecticut
- Dist. of Col.
- Delaware
- Florida
- Georgia
- Guam*
- Hawaii
- Idaho
- Illinois*
- Indiana
- Iowa†
- Kentucky
- Louisiana
- Maryland
- Michigan
- Minnesota
- Montana*
- Nebraska
- New Hampshire
- New Jersey
- New York
- New Mexico
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Rhode Island
- Texas
- Virginia
- Virgin Islands*
- West Virginia
- Wisconsin
- Wyoming

*States declining to include their data in this report are noted by asterisks.
†Owing to a delay in authorization to release data, information for Iowa is included in an addendum to this report.

The Trial State Assessment was designed to produce data on student achievement for each participating state and, where size and distribution permitted, on various subpopulations within the states including gender, racial/ethnic groups, parental education, and community type. In each of the 40 participating jurisdictions, a sample of about 2,500 eighth-grade public-school students was drawn.[3]

NAEP's 1990 Mathematics Assessment Framework

The objectives and framework for the 1990 Mathematics Assessment were developed through a process which included contributions from a broad spectrum of individuals. Under

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[3] Details of the technical procedures used to select the schools and students are contained in National Assessment of Educational Progress (1991) *NAEP 1990 Technical Report*, Princeton, NJ: Educational Testing Service and National Assessment of Educational Progress (1991) *Technical Report for the 1990 Trial State Assessment*, Princeton, NJ: Educational Testing Service.

NAGB direction, a special Assessment Planning Project was established by the Council of Chief State School Officers (CCSSO) to provide recommendations on a broad range of issues, including state-level concerns. The National Assessment Planning Project was guided by a Steering Committee whose members included policymakers, practitioners, and citizens nominated by 18 national organizations. A Mathematics Objectives Committee was established to recommend objectives and a framework for the 1990 assessment in accordance with guidelines established by the Steering Committee. Comprising parents, teachers, and mathematics educators, the Mathematics Objectives Committee examined state mathematics curriculum guides, conducted telephone interviews with leading mathematics educators, and reviewed a draft of the *Curriculum and Evaluation Standards for School Mathematics* developed by the National Council of Teachers of Mathematics. In addition, the Committee gave close consideration to the earlier NAEP mathematics assessments and reviewed responses to a survey sent to the states to elicit reactions to a proposed framework and list of mathematics objectives.

The framework developed and approved for the 1990 Mathematics Assessment consists of three mathematical abilities (conceptual understanding, procedural knowledge, and problem solving) and five content areas (numbers and operations; measurement; geometry; data analysis, statistics, and probability; and algebra and functions).[4] A short description of these abilities and content areas is presented in Appendix A. The 1990 assessment has greater emphasis on geometry, and algebra and functions, and less emphasis on numbers and operations than prior assessments. Included among the items are some open-ended problem-solving questions which assess high-level thinking skills that usually cannot be measured using multiple-choice questions. At Grade 4, some questions require the use of a ruler, while at Grades 8 and 12 some items require the use of a protractor. Items requiring the use of a calculator are also included at each grade level.

In addition to the mathematics questions, the 1990 Mathematics Assessment included questionnaires for students, teachers, and school administrators. Information on educational experiences, teaching methods, and demographic variables from these questionnaires may be used in the evaluation and interpretation of NAEP results. For example, student results can be presented separately for various subgroups of the population.

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[4] See Educational Testing Service (1988) Mathematics Objectives: 1990 Assessment, Princeton, NJ: Educational Testing Service.

Procedures

To set achievement levels for the 1990 Mathematics Assessment, NAGB established *ad hoc* advisory panels consisting of educators, scholars, employers, and other knowledgeable citizens. At a meeting held in Vermont in August 1990, these "judges" were asked to use a proven standard setting procedure to rate each assessment item.[5] After receiving training, the judges were divided into small groups for the actual rating of items. The judges reviewed the actual items from the 1990 Mathematics Assessment and were asked to indicate the proportion of students at each achievement level who should be expected to answer each question correctly. Next, they were presented with information on how students actually performed and asked to perform a second round of ratings. After a discussion of the first two rounds of ratings, the judges completed a third round.

A second panel meeting was convened in Washington, DC, in September 1990. Judges provided a fourth round of ratings and held a series of discussions that initially involved judges working at each grade level and later involved the full group of judges. Following these discussions, a fifth and final round of ratings was completed.

The procedures used in the Vermont and Washington meetings were the subject of extensive commentary and review by external consultants and organizations.[6] As a result of the various recommendations, a replication/validation study was undertaken in four states: Connecticut, Michigan, California, and Florida. In the replications, the judges' training was standardized via the use of a videotaped presentation. Judges reviewed smaller sets of items, allowing them more time per item. The levels of confidence reported by the replication/validation raters were higher than in the initial panel meetings.

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[5] The specific methods used are documented in National Assessment Governing Board (May 10, 1990) *Setting Appropriate Achievement Levels for the National Assessment of Educational Progress: Policy Framework and Technical Procedures*, Washington, DC: National Assessment Governing Board and in Ronald K. Hambleton and Mary Lyn Bourque (1991). *The LEVELS of Mathematics Achievement, Volume III: Technical Report*, Washington, DC: National Assessment Governing Board.

[6] The technical issues that were raised are discussed in detail in Hambleton and Bourque, op.cit.

Following the meetings, the results of the replication/validation study were examined by the Board and its external consultants. A thorough analysis of the two sets of data (one from Vermont/Washington and one from the replication/validation study) demonstrated that the results and recommendations from the two initiatives were not substantially different. Therefore, after reviewing the data and considering the recommendations, the Board adopted the achievement levels from the replication/validation study for use in reporting the 1990 NAEP mathematics results. These standards represent the judgment of NAGB after careful consideration of the recommendations of classroom teachers, education experts, and interested members of the general public.

The process used to set achievement levels, while imperfect, was serviceable. The Board was open to feedback from participants and is grateful for the advice it received from concerned observers of the standard setting process. In the future, the Board will explore alternative methodologies for dealing with all of the imperfections in the process.

Nevertheless, NAGB's process for setting achievement levels on the 1990 NAEP Mathematics Assessment is a landmark effort in both the policy and technical arenas. Prior to the Board's policy to set three achievement levels for each grade and subject in NAEP, no standards existed to inform policymakers and the public about what students *should* know and be able to do on the NAEP assessments. From a technical perspective, setting three levels per grade launched the Board into new measurement territory. Neither the standard-setting literature nor states' practices could provide full guidance in designing the intricate process needed to set achievement levels on the 1990 NAEP Mathematics Assessment. The achievement levels developed under the Board's authority represent a major innovation in large-scale assessment. For the first time on a national level, it is possible to answer the question, "how good is good enough?" NAEP achievement levels are standards of performance that prescribe what students at each grade should know and be able to do based on the NAEP assessment--and such standards allow the estimation of how many American students have reached these levels.

Achievement Level Descriptions

As part of the process for setting achievement levels, content-area specialists examined the performance of students on the test questions and the ratings of judges in the replication/validation process, and prepared detailed descriptions of the mathematics knowledge and skills for each level. Exhibits 1 through 3 show the full text of the descriptions. Sample assessment items selected from the released item pool are presented to illustrate the content of each level.

Next to each of the sample assessment exercises is information on the percentage of students in each grade answering the question correctly (% Correct Overall). Also shown are the percentage of students *at* each achievement level who correctly answered the item. These percentages were designed to reflect the performance of marginal students who just reached that level. For each item, the percentage correct *at* each achievement level represents the performance of those students who fell 12.5 scale-score points above or below the cutoff points for each level.

In the first example for Grade 4 Basic, 76 percent of all Grade 4 students gave the correct answer. Seventy-three percent of the Grade 4 students *at* the basic level (more precisely, 12.5 scale-score points above or below the cutoff point) gave the correct answer. Students *at* the cutoff point for the proficient level gave the correct answer in 94 percent of the cases while 98 percent of the students at the cutoff point for the advanced level responded correctly. In cases where the same assessment items were used for more than one grade, results are presented separately for each grade.

While a large percentage of the students answer each individual question correctly, the cumulative percentages correct across all items are much lower. The first example question, illustrating the basic level for Grade 4, was correctly answered by 76 percent of the Grade 4 students. The percentage of students answering all three of the sample questions correctly is lower. The number of students answering enough questions correctly to be considered at or above the basic level is lower still (64.4 percent).

Volume II of this report presents all of the released items for Grade 8. Data of student performance, by item, are presented for the individual states as well as for the nation as a whole.

Exhibit 1: Levels of Mathematics Achievement for Grade 4

(283) ADVANCED: Superior Performance

Fourth-grade students who are performing at the advanced level should be able to demonstrate flexibility in solving problems and relating knowledge to new situations. They should be able to use whole numbers to analyze more complex problems. Their understanding of fractions and decimals should extend to a number of representations. Students at this level should determine when estimation or calculator use is an appropriate solution to a problem, as well as read and interpret complex graphs. Advanced fourth-grade students should also be able to use measuring instruments in non-routine ways. These students should be able to solve simple problems involving geometric concepts and chance.

(245) PROFICIENT: Solid Academic Performance

Fourth-grade students who are performing at the proficient level should have an understanding of numbers and their application to situations from students' daily lives. The proficient student should be able to solve a wide variety of mathematical problems; use patterns and relationships to analyze mathematical situations; relate physical materials, pictures, and diagrams to mathematical ideas; and find and use relevant information in problem solving. Fourth-grade proficient students should understand numbers and concepts of place value and have an understanding of whole number operations, as well as a facility with whole number computation. For example, students should be able to solve problems with a calculator and have the ability to use estimation skills to solve problems. Proficient fourth-grade students should understand and use measurement concepts such as length; be able to collect, interpret, and display data; and use simple measurement instruments.

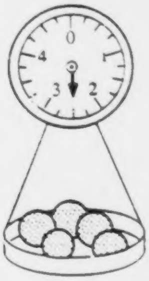
(207) BASIC: Partial Mastery of Knowledge and Skills

Fourth-grade students who are performing at the basic level should be able to solve routine one-step problems involving whole numbers with and without the use of a calculator. They should also be able to use physical materials and pictures to help them understand and explain mathematical concepts and procedures. Students at this level are beginning to develop estimation skills in measurement and number situations and should understand the meaning of whole number operations. For example, students performing at the basic level should be able to link the meaning of multiplication with the symbols needed to represent it. These students are also beginning to develop concepts related to fractions and read simple measurement instruments. Basic fourth-grade students should also be able to identify simple geometric figures and extend simple patterns involving geometric figures. These students should be able to read and use information from simple bar graphs.

Grade 4 Basic: Example 1

Grade 4: 76% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
73%	94%	98%



The scale shown above measures weight in pounds. What is the total weight of the oranges in the picture?

[✓ A] $2\frac{1}{2}$ pounds

B $3\frac{1}{2}$ pounds

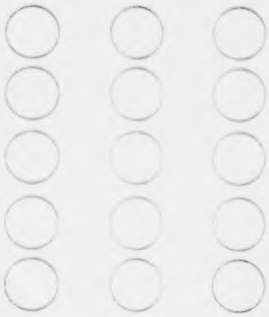
C 5 pounds

D 10 pounds

Grade 4 Basic: Example 2

Grade 4: 80% Correct Overall

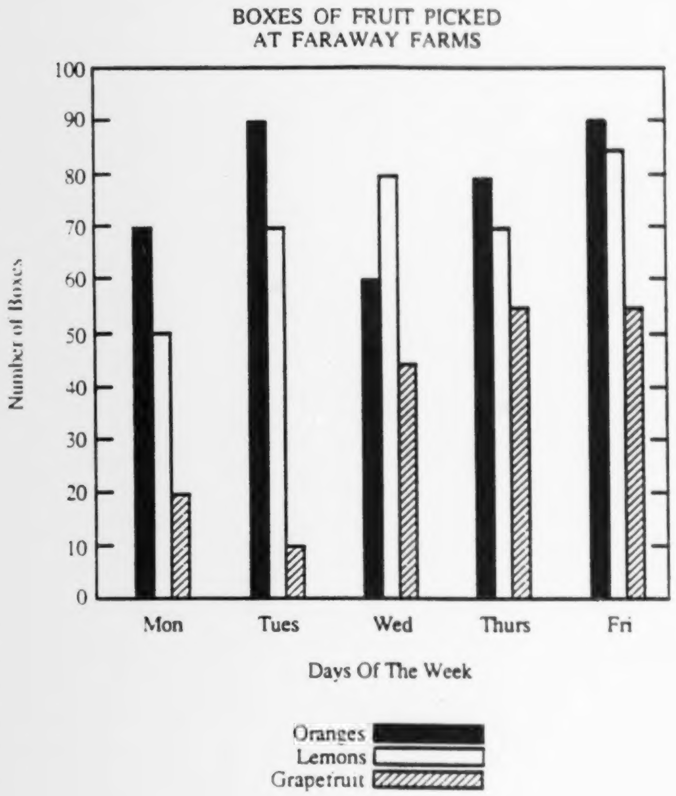
Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
79%	95%	100%



Write a multiplication sentence to find the number of circles.

5 × 3 = 15

Grade 4 Basic: Example 3



Grade 4: 80% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
79%	90%	98%

Grade 8: 89% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
88%	94%	94%

How many boxes of oranges were picked on Thursday?

A 55

B 60

C 70

[✓ D] 80

E 90

F I don't know.

Grade 4 Proficient: Example 1

Grade 4: 61% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
51%	79%	99%

On a flight from Los Angeles to New York, the cost of a fare was $400. Every seat was sold. What additional information do you need to find the total for all fares?

A None

B The number of employees on the plane

[✓ C] The number of passenger seats on the plane

D The distance from Los Angeles to New York

Did you use the calculator on this question?

○ Yes ○ No

Grade 4 Proficient: Example 2

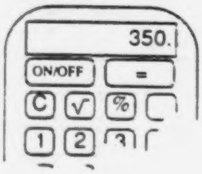
Grade 4: 60% Correct Overall

Percent Correct At Each Achievement Level

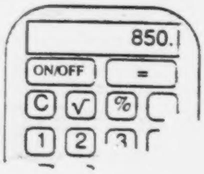
Basic	Proficient	Advanced
54%	75%	84%

The third grade collected more than 850 bottle caps for an art project. The fourth grade collected more than 500 bottle caps. Using her calculator, Maria found the exact total of all the bottle caps collected by both grades. Which calculator could be hers?

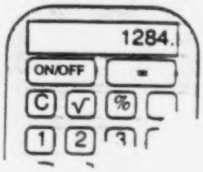
Ⓐ



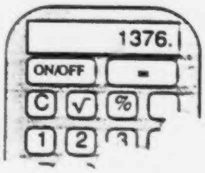
Ⓑ



Ⓒ



[✓ Ⓓ]



Did you use the calculator on this question?

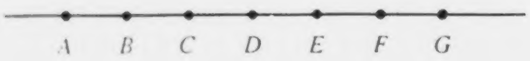
○ Yes ○ No

Grade 4 Proficient: Example 3

Grade 4: 60% Percent Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
54%	84%	97%



In the figure above, points labeled *A* through *G* are spaced evenly along a line. Which of the following distances is the greatest?

A From *A* to *D*

B From *C* to *F*

C From *E* to *G*

[✓ D] From *E* to *A*

Grade 4 Advanced: Example 1

Grade 4: 37% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
34%	38%	64%

Students in Mrs. Johnson's class were asked to tell why $\frac{4}{5}$ is greater than $\frac{2}{3}$. Whose reason is best?

A Kelly said, "Because 4 is greater than 2."

B Keri said, "Because 5 is larger than 3."

[✓ C] Kim said, "Because $\frac{4}{5}$ is closer than $\frac{2}{3}$ to 1."

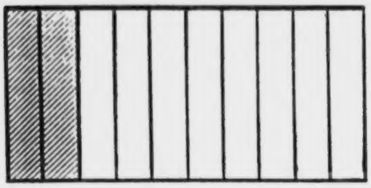
D Kevin said, "Because 4 + 5 is more than 2 + 3."

Grade 4 Advanced: Example 2

Grade 4: 61% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
56%	71%	79%



Which decimal represents the shaded part of the figure?

A 0.5

B 0.28

[✓ C] 0.2

D 0.02

Grade 4 Advanced: Example 3

Grade 4: 15% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
6%	28%	72%

The table below shows some number pairs. The following rule was used to find each number in column B.

Rule: Multiply the number in column A by itself and then add 3. Fill in the missing number, using the same rule.

	A	B
Example:	2	$7 = (2 \times 2) + 3$
	3	12
	5	28
	8	67

Did you use the calculator on this question?

○ Yes ○ No

Exhibit 2: Levels of Mathematics Achievement for Grade 8

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(336) ADVANCED: Superior Performance

Eighth-grade students performing at the advanced level should be able to solve, with and without a calculator, a wide range of practical problems involving percents, proportions, and exponents. These students should have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents and their connections with proportions. Eighth-grade advanced students should also understand and be able to use scale drawings, metric measurements, volume, and accuracy of measurement. These students should be able to solve problems involving elementary concepts of probability, interpret line graphs, and apply basic geometric properties related to triangles and to perpendicular and parallel lines.

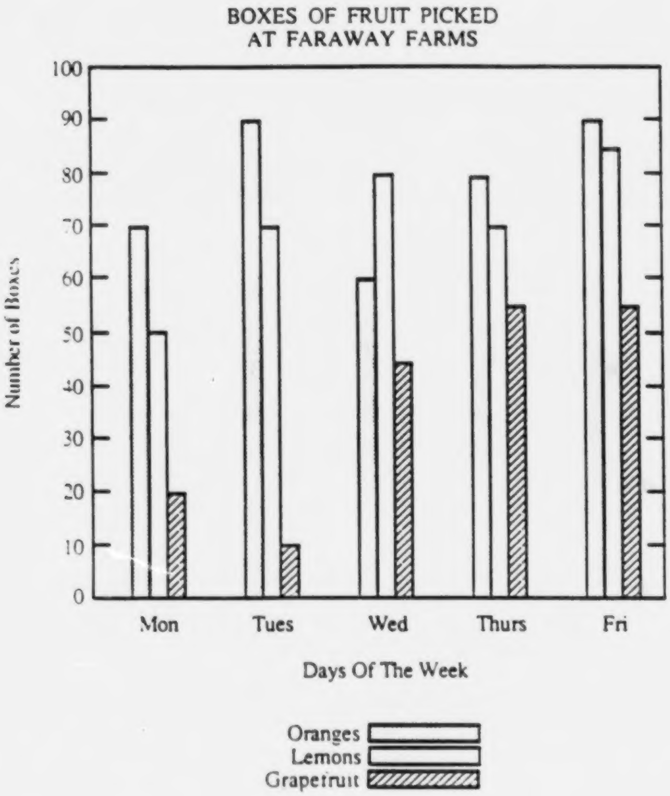
(295) PROFICIENT: Solid Academic Performance

Students at the proficient level should be able, with and without a calculator, to solve problems requiring decimals, fractions, and proportions. They should be able to compute with integers. They should be able to classify geometric figures based on their properties. Proficient eighth-grade students should be able to read, interpret, and construct line and circle graphs and show understanding of the basic concepts of probability. These students should be able to translate verbal problem situations into simple algebraic expressions and identify symbolic algebraic expressions representing linear situations.

(255) BASIC: Partial Mastery of Knowledge and Skills

The eighth-grade student performing at the basic level should be able to identify and use the correct operations for solving one- and two-step problems involving addition, subtraction, multiplication, and division of whole numbers and decimals. These students should also have an understanding of place value and order of operations, and a conceptual understanding of fractions. They should be able to use a calculator and estimation to arrive at answers to simple problems. Basic eighth-grade students can use rulers to calculate the perimeter and area of rectangular figures, and make conversions between units of measure within a given system of measurement. These students should be able to use basic geometric terms and identify elementary geometric figures. They should be able to read, interpret, and construct bar graphs and evaluate or solve simple linear equations involving whole numbers.

Grade 8 Basic: Example 1



On which day were more boxes of lemons picked than either boxes of oranges or boxes of grapefruit?

A Monday

B Tuesday

[✓ C] Wednesday

D Thursday

E Friday

F No day

G I don't know.

Grade 4: 42% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
31%	67%	79%

Grade 8: 74% Correct Overall

Percent Correct At Each Achievement Level

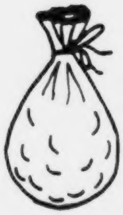
Basic	Proficient	Advanced
73%	90%	97%

Grade 8 Basic: Example 2

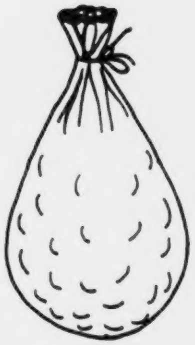
Grade 8: 83% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
84%	93%	96%

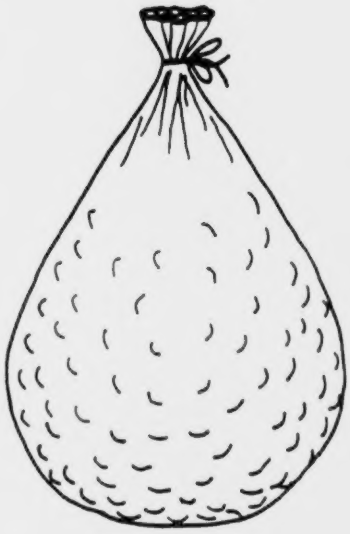
There is only one red marble in each of the bags shown below. Without looking, you are to pick a marble out of one of the bags. Which bag would give you the greatest chance of picking the red marble?



10 marbles



100 marbles



1000 marbles

[✓ A] Bag with 10 marbles

B Bag with 100 marbles

C Bag with 1000 marbles

D It makes no difference.

E I don't know.

Grade 8 Basic: Example 3

What is the value of $n + 5$ when $n = 3$?

Answer: 8

Grade 8: 77% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
74%	95%	95%

Grade 8 Proficient: Example 1

In the model town that a class is building, a car 15 feet long is represented by a scale model 3 inches long. If the same scale is used, a house 35 feet high would be represented by a scale model how many inches high?

A $\frac{45}{35}$

B 3

C 5

[✓ D] 7

E $\frac{35}{3}$

Did you use the calculator on this question?

○ Yes ○ No

Grade 8: 59% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
50%	84%	99%

Grade 8 Proficient: Example 2

Grade 8: 49% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
36%	81%	99%

The weight of an object on the Moon is $\frac{1}{6}$ the weight of that object on the Earth. An object that weighs 30 pounds on Earth would weigh how many pounds on the Moon?

Answer: 5

Did you use the calculator on this question?

○ Yes ○ No

Grade 8 Proficient: Example 3

Grade 8: 49% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
36%	73%	94%

Grade 12: 63% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
54%	89%	96%

If $\frac{2}{25} = \frac{n}{500}$ then $n =$

A 10

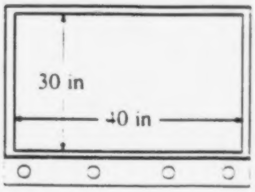
B 20

C 30

[✓ D] 40

E 50

Grade 8 Advanced: Example 1



What is the diagonal measurement of the TV screen shown in the figure above?

A 25 inches

B 35 inches

[✓ C] 50 inches

D 70 inches

E 1,200 inches

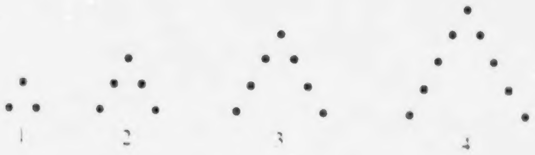
Grade 8: 25% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
16%	40%	61%

Grade 12: 43% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
26%	76%	98%

The next two questions refer to the following pattern of dot-figures.



Grade 8 Advanced: Example 2

If this pattern of dot-figures is continued, how many dots will be in the 100th figure?

A 100

B 101

C 199

D 200

[✓ E] 201

Grade 8: 34% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
23%	47%	81%

Grade 12: 49% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
36%	77%	94%

Grade 8 Advanced: Example 3

Explain how you found your answer to the question above.

Answer: $(N \times 2) + 1$

Grade 8: 15% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
5%	24%	54%

Grade 12: 27% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
12%	51%	83%

Exhibit 3: Levels of Mathematics Achievement for Grade 12

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(358) ADVANCED: Superior Performance

Twelfth-grade students who are performing at the advanced level should be able to investigate numerical relationships and determine the validity of conjectures involving number theory concepts such as parity (odd, even) and divisibility. These students should be able to establish procedures for the comparison and conversion of measurements of length, area, volume, and capacity. These students should understand the Pythagorean theorem and its applications, as well as use of coordinate geometry to represent relationships and solve problems. These students should also be able to graphically describe data for a situation, as well as provide numerical measures of central tendency (mean, median, and mode) and variability. Advanced twelfth-grade students should be able to apply probability and statistics concepts in reasoning about population characteristics based on information derived from a sample, including judging the adequacy of the sample. They should also be able to determine the probability of diverse events. These students should be able to translate information about linear situations from verbal or tabular forms to equations and analyze, verbally or in writing, the nature of relationships involving change in the values of the variables involved. These students should also be able to solve linear equations, inequalities, and systems of two equations in two variables, as well as evaluate a linear function and relate the value to a point on a graph of the function.

(330) PROFICIENT: Solid Academic Performance

Twelfth-grade students who are performing at the proficient level should have considerable command of the use of number and operations involving all forms of real numbers. In particular, these students should be able to represent problems involving integers, decimals, and fractions using symbols or graphs. These students should also be able to select, interpret, and use measurement relationships and formulas in problem situations. They should be able to make and evaluate conjectures about the properties of geometric figures. Proficient twelfth-grade students should be able to relate data about chance to physical models and use such models to solve problems. These students should be able to use coordinate systems on a number line to represent solutions to one-variable inequalities and use ordered pairs to describe locations in the plane.

(282) BASIC: Partial Mastery of Knowledge and Skills

Twelfth-grade students who are performing at the basic level should demonstrate conceptual and procedural understanding of whole numbers, integers, fractions, and decimals and use them when solving routine problems. They should understand and apply measurement concepts and skills, including estimation, and solve routine problems involving time, money, and length. They should also be able to read scale drawings and use formulas to find areas and volumes. Basic twelfth-grade students should be able to identify a wide range of geometric figures, describe their characteristics, and solve problems involving angle measurements and similar triangles. These students should be able to interpret data in a variety of settings, including charts, tables, and graphs. Their understanding of chance should include the ability to select favorable outcomes to a situation and find the probability of an event in a setting involving a small number of outcomes. They should also be able to simplify and evaluate simple linear expressions and solve simple one-step linear equations and inequalities.

Grade 12 Basic: Example 1

Grade 12: 79% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
76%	93%	96%

POPULATIONS OF DETROIT AND LOS ANGELES
1920 - 1970

Year	City	
	Detroit	Los Angeles
1920	950.000	500.000
1930	1.500.000	1.050.000
1940	1.800.000	1.500.000
1950	1.900.000	2.000.000
1960	1.700.000	2.500.000
1970	1.500.000	2.800.000

How many more people were living in Los Angeles in 1960 than 1940?

A 100,000

B 500,000

C 800,000

[✓ D] 1,000,000

E 2,500,000

F I don't know.

Grade 12 Basic: Example 2

If the diameter of a circle is 30 centimeters, what is the radius of the circle?

A 10 cm

[✓ B] 15 cm

C 60 cm

D 90 cm

E 180 cm

Did you use the calculator on this question?

○ Yes ○ No

Grade 12: 80% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
74%	98%	100%

Grade 12 Basic: Example 3

How many hours are equal to 150 minutes?

A $1\frac{1}{2}$

B $2\frac{1}{4}$

C $2\frac{1}{3}$

[✓ D] $2\frac{1}{2}$

E $2\frac{5}{6}$

Grade 8: 59% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
53%	76%	98%

Grade 12: 74% Correct Overall

Percent Correct At Each Achievement Level

Basic	Proficient	Advanced
72%	87%	92%

Grade 12 Proficient: Example 1

If $f(n) = n + 5$, what is the value of $f(3)$?

Answer: 8

Grade 12: 52% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
37%	90%	98%

Grade 12 Proficient: Example 2

The perimeter of a square is 24 centimeters. What is the area of that square?

[✓ A] 36 square cm

B 48 square cm

C 96 square cm

D 576 square cm

E I don't know.

Grade 12: 45% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
20%	89%	98%

Grade 12 Proficient: Example 3

What percent of 175 is 7?

[✓ A] 4%

B 12.25%

C 25%

D 40%

Did you use the calculator on this question?

○ Yes ○ No

Grade 12: 49% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
33%	79%	93%

Grade 12 Advanced: Example 1

Grade 12: 10% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
3%	16%	45%

A contractor is building 5 different model homes on 5 adjacent lots on one side of a street. If 1 house is to be built on each lot, how many different arrangements of the 5 houses are possible?

[✓ A] 120

B 60

C 25

D 10

E 5

Did you use the calculator on this question?

○ Yes ○ No

Grade 12 Advanced: Example 2

Grade 12: 26% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
17%	36%	70%

Suppose that $a_1, a_2, a_3, \ldots$ is the sequence of numbers such that $a_1 = 3$, $a_2 = \sqrt{a_1} + 1$, $a_3 = \sqrt{a_2} + 1$, and, in general, $a_{n+1} = \sqrt{a_n} + 1$ for all $n \geq 1$. To the nearest hundredth, the value of a_5 is

A 1.63

[✓ B] 2.62

C 2.73

D 3.24

E 5.73

Did you use the calculator on this question?

○ Yes ○ No

Grade 12 Advanced: Example 3

A savings account earns 1 percent interest per month on the sum of the initial amount deposited plus any accumulated interest. If a savings account is opened with an initial deposit of $1,000 and no other deposits or withdrawals are made, what will be the amount in this account at the end of 6 months?

A $1,060.00

[✓ B] $1,061.52

C $1,072.14

D $1,600.00

E $6,000.00

Did you use the calculator on this question?

○ Yes ○ No

Grade 12: 15% Correct Overall

Percent Correct At Each Achievement Level		
Basic	Proficient	Advanced
8%	21%	55%

Chapter Two

NAEP Mathematics Achievement Levels: National Results

Results from the 1990 NAEP Mathematics Assessment indicate that over one-third of the nation's students in Grades 4, 8, or 12 are performing below the basic level (see Figure 2.1). Less than one-half of the students in each grade are performing at the basic level. Less than 20 percent of the students are performing at the proficient level, which represents solid academic performance and demonstrated competency over challenging subject matter. Far fewer students (less than 3 percent) reach the advanced level signifying superior performance.

Figure 2.2 and the remaining tables in this chapter display the results for the 1990 NAEP Mathematics Assessment in a cumulative format. Data from the national sample are presented in terms of the percentages of students *at or above* each achievement level. In Grade 4, 63.3 percent of the students are at or above the basic level. A much smaller segment (14.9 percent) are performing at or above the proficient level and 0.6 percent of the Grade 4 students reach the advanced level. Similar distributions are found for the nation's students in Grades 8 and 12.[7] In Grade 8, 62.1 percent of the students are performing at or above the basic level while 18.1 percent are at or above the proficient level. One percent of these students reach the advanced level. Sixty-four percent of the students in Grade 12 are at or above the basic level. Less than one-sixth of the Grade 12 students (16.2 percent) reach the proficient level. In Grade 12, 2.6 percent of the students are performing at the advanced level.

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[7] These generally similar patterns across in each grade are a result of similar standards being applied to each set of questions. However, the processes were conducted separately and as a result, comparisons across grades are not recommended.

Figure 2.1

Percentage of Students Below Basic and Within Each Achievement Level, by Grade, 1990 NAEP Mathematics Assessment

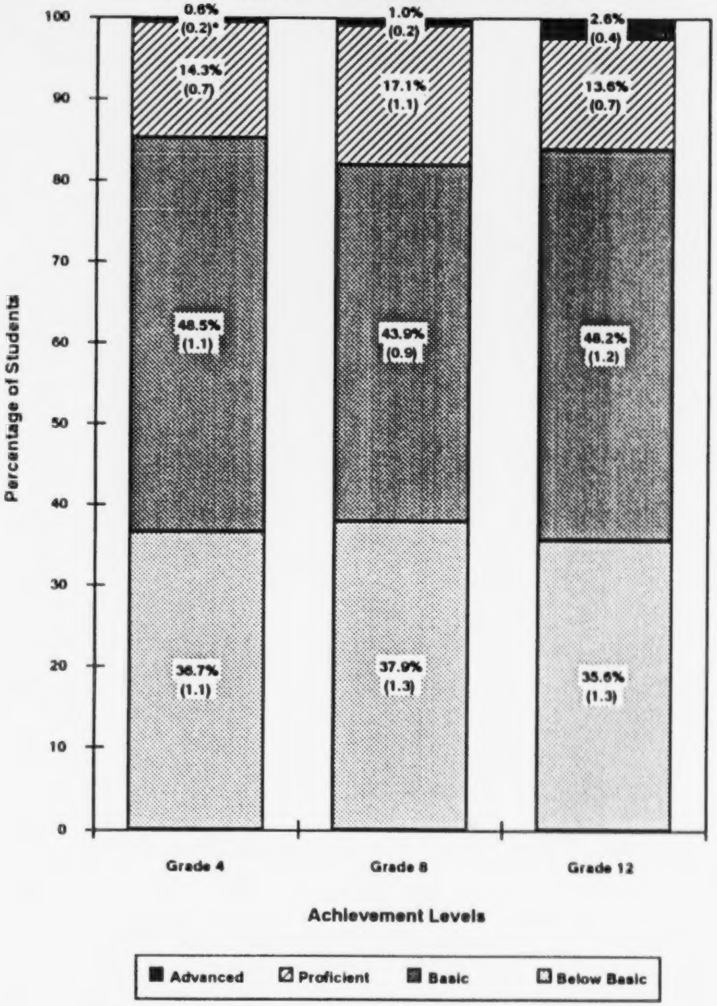
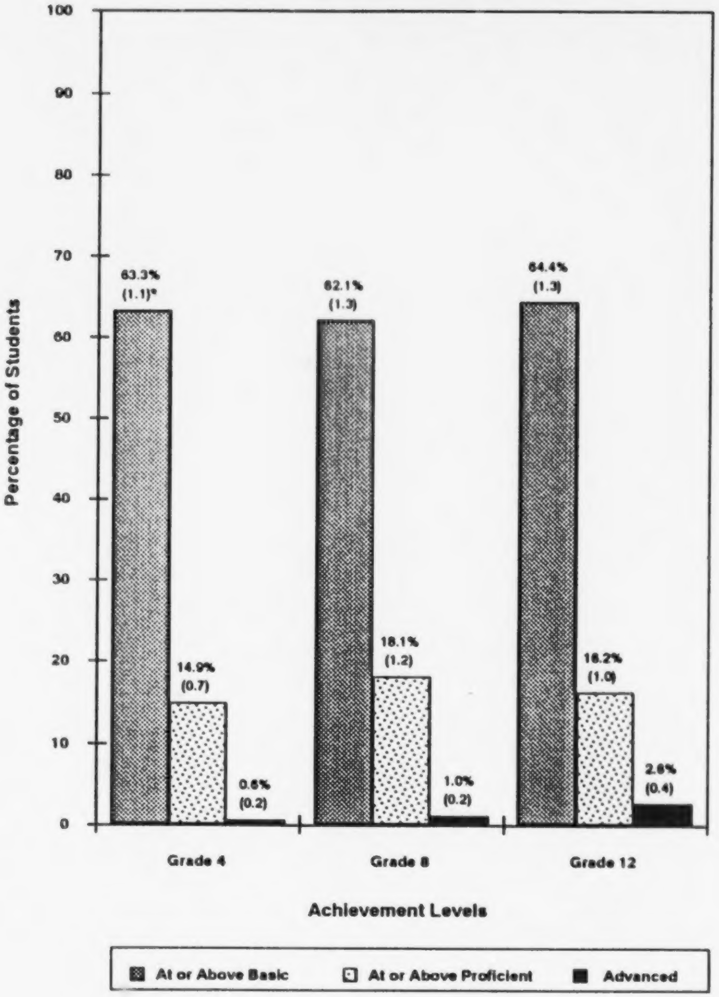


Figure 2.2

Percentage of Students At or Above Achievement Levels, by Grade, 1990 NAEP Mathematics Assessment



* Standard errors are shown in parentheses

Table 2.1

Percentage of Students At or Above Achievement Levels
By Grade and Gender
1990 NAEP Mathematics Assessment

GRADE GENDER	ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Grade 4			
Male	64.7 (1.5)	15.6 (0.9)	0.8 (0.2)
Female	61.9 (1.3)	14.0 (1.0)	0.4 (0.2)
Total	63.3 (1.1)	14.9 (0.7)	0.6 (0.2)
Grade 8			
Male	61.4 (1.5)	20.0 (1.3)	1.4 (0.4)
Female	62.8 (1.3)	16.3 (1.7)	0.6 (0.2)
Total	62.1 (1.3)	18.1 (1.2)	1.0 (0.2)
Grade 12			
Male	65.3 (1.8)	19.2 (1.4)	3.6 (0.7)
Female	63.6 (1.3)	13.4 (1.0)	1.7 (0.4)
Total	64.4 (1.3)	16.2 (1.0)	2.6 (0.4)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

The data in the graphs and tables in this chapter illustrate the percentage of students *at or above* each achievement level. Since the students at the proficient and advanced levels have also satisfied the requirements for the basic level, the percentage of students *at or above* the basic level includes these students. Similarly, the percentages at the proficient level include those students who reach the advanced level. These percentages are cumulative and do not sum to 100 percent. The percentage of students below basic are not presented in the graphs or figures. These percentages, however, can be calculated by subtracting the percentage at or above basic from 100.

In addition to these summary findings, there are important patterns for subpopulations of students. In this chapter, tabulations are presented for subpopulations defined by gender, race/ethnicity, type of community, and parental education.[8] Later in the chapter, tabulations are presented illustrating performance by number of high school mathematics classes (for Grade 12 students).

Gender differences in mathematics achievement have been an important issue for students, parents, educators, and policymakers. Table 2.1 presents data on the percentages of males and females at or above each achievement level. In Grades 4 and 8, similar percentages of males and females reach the basic, proficient, and advanced levels.[9] In Grade 12, however, the percentage of males reaching the proficient and advanced achievement levels is greater than that for females.

In selecting the national sample of students to be tested, NAEP tries to ensure representation of all major U.S. race/ethnic groups in sufficient quantities for statistical inference. Table 2.2 presents the results for these subpopulations. There are large differences in the distributions of race/ethnic groups across achievement levels. Asian/Pacific Islanders have the highest percentages at or above the basic and proficient levels. Whites have the second highest percentages at or above these same two achievement levels, substantially behind the Asian/Pacific Islanders, but above the other minority groups.

Because students in the tested sample come from a variety of schools and school districts, it is possible to analyze the data according to the type of community in which the students attend school. The data are displayed in four categories: advantaged urban, disadvantaged urban, extreme rural, and other. (See Appendix C for the complete definitions.) The percentage of students at or above each achievement level varies by type of community. Students in Grade 4 from advantaged urban communities have the highest percentage at the basic and proficient level (see Table 2.3). Lower percentages of Grade 4 students from extreme rural communities reach these levels. Students from disadvantaged

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[8] The definitions for these subpopulations are the same as those used in other reports of NAEP data. See Appendix C for the criteria used to identify these groups.

[9] While there are some differences in the percentage scores in Table 2.1, these differences do not meet the criteria established for drawing inferences from NAEP. For further discussion, see Appendix B.

Table 2.2

Percentage of Students At or Above Achievement Levels
By Grade and Race/Ethnicity
1990 NAEP Mathematics Assessment

GRADE RACE/ETHNICITY	ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Grade 4			
White	73.6 (1.3)	19.0 (0.9)	0.8 (0.2)
Black	30.3 (1.8)	2.1 (0.7)	0.0 (0.0)
Hispanic	41.6 (2.1)	5.2 (1.0)	0.1 (0.0)
Asian/Pacific Islander	77.8 (3.3)	28.5 (4.6)	1.7 (1.3)
American Indian	55.6 (5.5)	5.5 (2.2)	0.2 (0.0)
Total	63.3 (1.1)	14.9 (0.7)	0.6 (0.2)
Grade 8			
White	71.7 (1.4)	22.3 (1.5)	1.2 (0.3)
Black	29.6 (2.2)	4.2 (1.1)	0.0 (0.0)
Hispanic	40.2 (2.7)	6.1 (1.1)	0.0 (0.0)
Asian/Pacific Islander	82.2 (3.5)	38.9 (5.5)	6.4 (2.8)
American Indian †	41.6 (8.4)	5.1 (2.5)	0.0 (0.0)
Total	62.1 (1.3)	18.1 (1.2)	1.0 (0.2)
Grade 12			
White	71.8 (1.4)	19.2 (1.2)	3.0 (0.5)
Black	33.6 (2.4)	2.1 (0.7)	0.1 (0.2)
Hispanic	42.8 (2.7)	6.1 (1.5)	0.5 (0.3)
Asian/Pacific Islander	82.8 (3.7)	34.0 (7.1)	8.8 (2.9)
American Indian	*** (***)	*** (***)	*** (***)
Total	64.4 (1.3)	16.2 (1.0)	2.6 (0.4)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

urban communities are least likely to be at or above the basic and proficient levels in Grade 4 and less likely to be at or above the basic level in Grade 8.

Part of the NAEP assessment asked students to give background information about themselves and their parents. This is done so that users of this and other reports of NAEP

Table 2.3

Percentage of Students At or Above Achievement Levels By Grade and Type of Community 1990 NAEP Mathematics Assessment

GRADE TYPE OF COMMUNITY	ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Grade 4			
Advantaged Urban	83.7 (3.1)	29.7 (2.9)	1.4 (0.6)
Disadvantaged Urban	40.6 (4.2)	5.3 (1.4)	0.1 (0.0)
Extreme Rural	68.9 (3.2)	12.4 (2.4)	0.3 (0.4)
Other	62.2 (1.5)	14.1 (0.8)	0.6 (0.2)
Total	63.3 (1.1)	14.9 (0.7)	0.6 (0.2)
Grade 8			
Advantaged Urban †	83.0 (3.3)	35.3 (6.8)	3.0 (1.1)
Disadvantaged Urban	44.1 (3.8)	10.1 (1.8)	0.6 (0.3)
Extreme Rural	56.6 (4.0)	14.9 (2.3)	0.3 (0.4)
Other	62.3 (1.6)	17.1 (1.0)	0.9 (0.2)
Total	62.1 (1.3)	18.1 (1.2)	1.0 (0.2)
Grade 12			
Advantaged Urban †	77.7 (3.6)	28.5 (3.6)	6.0 (1.5)
Disadvantaged Urban	48.2 (5.8)	9.6 (2.3)	1.2 (0.6)
Extreme Rural †	59.3 (4.1)	12.2 (2.3)	0.8 (0.6)
Other	66.4 (1.5)	16.5 (1.2)	2.7 (0.6)
Total	64.4 (1.3)	16.2 (1.0)	2.6 (0.4)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

data can study the correlates of achievement in making policy decisions. One of those variables --parents' education-- is strongly and directly to the percentage of students at each achievement level. Students whose parents did not finish high school have the lowest percentages at the basic and proficient achievement levels (see Table 2.4). In every grade, students whose parents finished high school (but do not have schooling beyond high school) have higher percentages at each achievement level than the students whose parents did not finish high school, but lower percentages at each achievement level than students whose

Table 2.4

Percentage of Students At or Above Achievement Levels By Grade and Parents' Education 1990 NAEP Mathematics Assessment

GRADE	ACHIEVEMENT LEVEL		
PARENTS' EDUCATION	Basic	Proficient	Advanced
Grade 4			
Did Not Finish High School	48.6 (4.0)	4.9 (1.8)	0.0 (0.0)
Graduated High School	59.3 (2.4)	8.4 (1.3)	0.1 (0.1)
Some Education After High School	77.2 (2.6)	25.4 (3.0)	1.3 (0.8)
Graduated College	71.8 (1.5)	22.9 (1.2)	1.0 (0.3)
Total	63.3 (1.1)	14.9 (0.7)	0.6 (0.2)
Grade 8			
Did Not Finish High School	35.1 (2.6)	4.1 (1.5)	0.1 (0.1)
Graduated High School	50.8 (1.8)	8.4 (1.0)	0.2 (0.2)
Some Education After High School	71.3 (1.6)	19.4 (1.3)	0.9 (0.4)
Graduated College	76.6 (1.6)	29.3 (2.0)	1.9 (0.4)
Total	62.1 (1.3)	18.1 (1.2)	1.0 (0.2)
Grade 12			
Did Not Finish High School	34.9 (2.6)	3.2 (1.3)	0.2 (0.2)
Graduated High School	48.9 (2.0)	6.6 (1.0)	0.4 (0.3)
Some Education After High School	68.5 (1.3)	13.9 (1.2)	1.3 (0.4)
Graduated College	78.7 (1.5)	26.4 (1.7)	5.3 (0.8)
Total	64.4 (1.3)	16.2 (1.0)	2.6 (0.4)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded, "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

parents have some education beyond high school. Students whose parents are college graduates have the highest percentages at basic and proficient levels in Grades 8 and 12.[10]

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[10] The differences between students whose parents have some education after high school and the students whose parents are college graduates are not significant for Grade 4. Some of this pattern may be related to limitations of the data and reporting errors. For example, 35 percent of the Grade 4 students were unable to supply information on parents' education.

Table 2.5

Percentage of Students At or Above Achievement Levels By Grade and Public/Private School 1990 NAEP Mathematics Assessment

GRADE TYPE OF SCHOOL	ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Grade 4			
Public Schools	61.3 (1.4)	13.6 (0.9)	0.5 (0.2)
Private Schools	78.6 (2.5)	24.0 (2.2)	0.9 (0.4)
Total	63.3 (1.1)	14.9 (0.7)	0.6 (0.2)
Grade 8			
Public Schools	60.1 (1.4)	17.1 (1.4)	1.0 (0.2)
Private Schools	78.1 (2.2)	26.7 (2.7)	1.1 (0.6)
Total	62.1 (1.3)	18.1 (1.2)	1.0 (0.2)
Grade 12			
Public Schools	63.4 (1.4)	16.2 (1.1)	2.6 (0.5)
Private Schools	73.8 (2.9)	16.4 (2.1)	2.0 (0.6)
Total	64.4 (1.3)	16.2 (1.0)	2.6 (0.4)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

There are also differences between the performance of public and private school students. In Grades 4 and 8, the percentage of private school students at the basic and proficient levels is greater than the percentage of public school students (see Table 2.5). The percentage of private school students reaching the basic level in Grade 12 is also greater than the percentage of public school students.

At the high school level, one variable that makes a difference in NAEP mathematics performance is the number of semesters of high school mathematics taken by the student. The number of high school mathematics courses taken was reported by the students on the questionnaires that accompanied the assessment.[11] For Grade 12 students, there is a strong

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[11] At earlier grades, it can be assumed that mathematics is a consistent and not a variable component of the curriculum.

Table 2.6

Percentage of Students At or Above Achievement Levels By Number of Semesters of High School Mathematics (Grade 12 Only) 1990 NAEP Mathematics Assessment

SEMESTERS OF HIGH SCHOOL MATHEMATICS	GRADE 12 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Grade 12			
Zero to Three Semesters	27.5 (2.1)	0.7 (0.6)	0.0 (0.0)
Four to Five Semesters	53.1 (2.5)	5.2 (1.2)	0.5 (0.3)
Six to Seven Semesters	77.5 (1.7)	10.4 (1.3)	0.8 (0.4)
Eight or More Semesters	90.9 (0.8)	38.6 (2.0)	7.0 (1.1)
Total	64.4 (1.3)	16.2 (1.0)	2.6 (0.4)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

relationship between number of high school mathematics courses and achievement (see Table 2.6). The percentage of students reaching the basic and proficient levels increases with the number of semesters of mathematics.

Examination of the results for different subpopulations indicates that there are important variations in the percentage of students reaching the three achievement levels. These findings should give parents, educators, and policy makers guidance in developing programs and policies. The significant (and sometimes substantial) differences across groups, however, are largely variations on a theme. Even in the most successful demographic groups, the majority of the students do not meet the performance standards set for the proficient level and only a small fraction of the students reach the advanced level. The failure of the students to reach the performance standards set by a broad-based group of citizens is not the problem of isolated groups of students but, rather, a reflection of the performance of all segments of the population.

Chapter Three

NAEP Mathematics Performance Standards: State Results for Grade 8

The state data presented in this chapter are from the Trial State Assessment and differ in several respects from the national data presented in the previous chapter. In response to the legislative requirement, the Trial State Assessments were conducted by personnel from each of the participating states and not by a single organization, as was the case for the national assessment. Furthermore, the Trial State Assessment involved only Grade 8 students in public schools and was administered in the winter, whereas the national assessment included private-school students and both winter and spring administrations.

As a result of these differences, the results for each state are not strictly comparable to the national data presented in Chapter 2. To permit contrasts of state results to regional and national data, a separate State Aggregate Comparison (SAC) sample was created for the Trial State Assessment data from the winter half-sample of the National Assessment with only the public schools included. The regional and national data reported for comparative purposes in this chapter from the SAC sample are not the same as the national data reported in the previous chapter.[12] The state and the SAC samples are smaller than the national sample and this places some additional constraints on the estimates and interpretations of the data. Following established NAEP procedures, data are not reported for subpopulations with fewer than 62 students.

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[12] For further information on the procedures used in the Trial State Assessment and the SAC sample, see Educational Testing Service (1991) *Technical Report of the 1990 Trial State* Assessment, Rosedale, NJ: Educational Testing Service.

As was the case in the previous chapter, most of the data in the graphs and tables in this chapter illustrate the percentage of students *at or above* each achievement level. Since the students at the proficient and advanced levels have also satisfied the requirements for the basic level, the percentage of students *at or above* the basic level includes these students. Similarly, the percentages at the proficient level include those students who reach the advanced level. These percentages are cumulative and do not sum to 100 percent. The percentage of students below basic are not presented in the graphs or figures. This percentage, however, can be calculated by subtracting the percentage at or above basic from 100.

Alabama

In Alabama, 53.8 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-AL). This is virtually the same as the percentage for the Southeast region (53.5 percent) but more than for the nation as a whole (41.8 percent). Over one-third (37.4 percent) of the Alabama students are performing at the basic level. Almost one-tenth (8.3 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.4 percent meet the standards for the advanced level.

Figure 3.2-AL and the tables for Alabama present the information in terms of the percentages of students "at or above" each achievement level. Over 46 percent of Alabama students are at or above the basic level. Just under one-tenth (8.8 percent) of Alabama's Grade 8 students are at or above the proficient level. This is close to the regional figure (11.3 percent) but below the national figure (15.5 percent). Less than 1 percent (0.4 percent) of the students in Alabama reach the advanced level, the same as the percentage for the Southeast region and not significantly above the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that less than one-half of Alabama's Grade 8 students are likely to be able to use the correct operations for solving one- and two-step problems or have a conceptual understanding of place value or fractions. Moreover, about one-tenth (those at or above the proficient level) are likely to be able to be able to read, interpret, or construct line or circle graphs, or identify simple algebraic expressions. Very few students can be expected to solve a wide range of practical problems involving percents, proportions, or exponents.

Figure 3.1-AL

Percentage of Students Below Basic and Within Each Achievement Level for Alabama

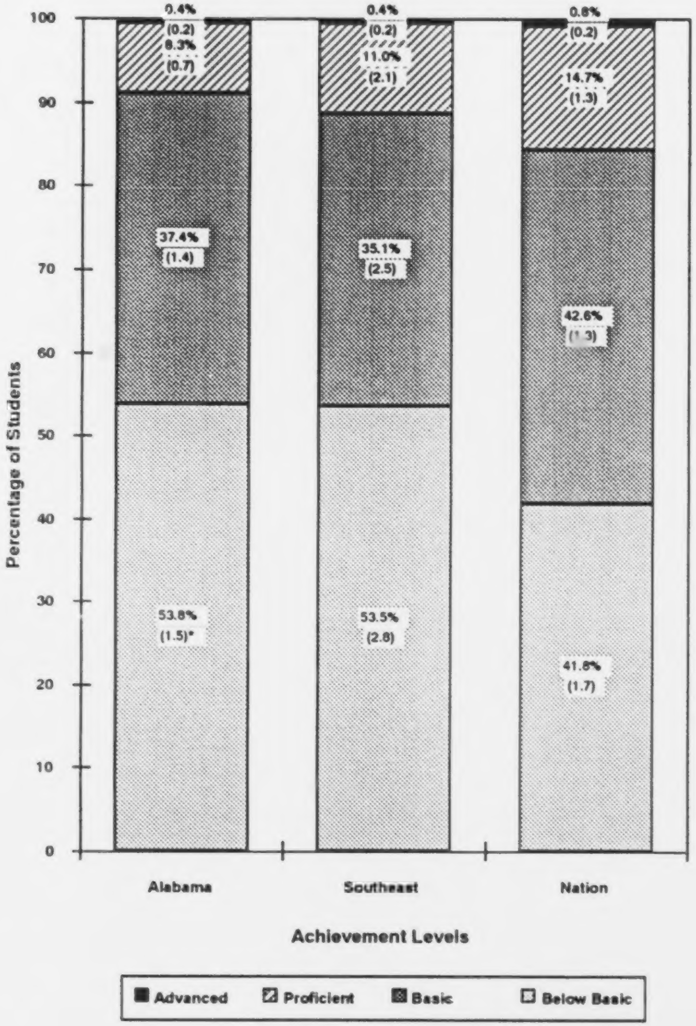
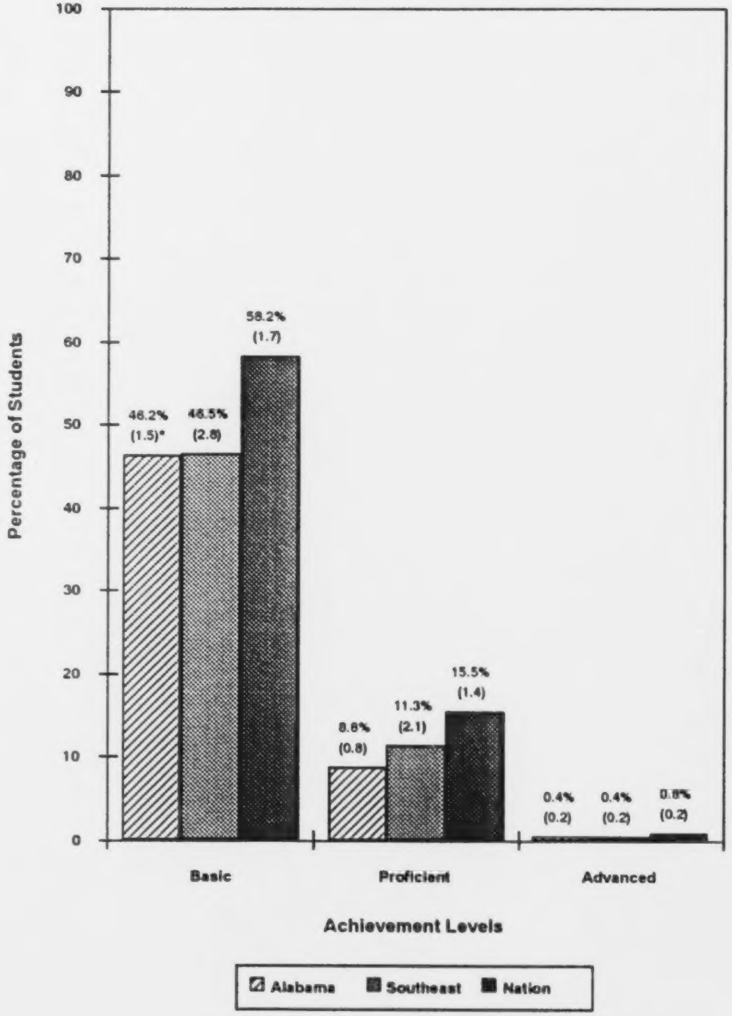


Figure 3.2-AL

Percentage of Students At or Above Grade 8 Achievement Levels for Alabama



* Standard errors are shown in parentheses

The results for Alabama have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[13] Tables 3.1-AL through 3.4-AL present these findings for Alabama and the most significant relationships are summarized below.

Male students in Alabama are no more likely than female students to be at or above the basic or proficient level (see Table 3.1-AL). Alabama students of either gender, however, are less likely than their national counterparts to be at or above the basic and proficient levels.

Whites, Blacks and Hispanics are the major race/ethnic groups in Alabama. The percentage of White students reaching the basic and proficient levels is higher than that of Black or Hispanic students (see Table 3.2-AL). A smaller percentage of White students reach the basic and proficient levels in Alabama than in the nation as a whole.

In Alabama, students from advantaged urban communities are more likely to be at or above the basic level than are students from extreme rural communities (see Table 3.3-AL). These results must be interpreted with caution, however, since the nature of the sample does not allow for accurate determination of the variability for this subgroup.

In Alabama, as in the rest of the nation, student performance is strongly related to parental education. Students in Alabama whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-AL). Students whose parents graduated from high school are also more likely to reach the basic and proficient levels than students whose parents did not graduate from high school. At most levels of parental education, however, students from Alabama are less likely to reach the basic and proficient levels than their national counterparts.

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[13] See Appendix B for complete definitions of these subpopulations.

Table 3.1-AL

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Alabama

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Alabama	47.4 (1.9)	10.0 (1.1)	0.4 (0.3)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Alabama	45.0 (1.7)	7.6 (0.9)	0.4 (0.3)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Alabama	46.2 (1.5)	8.8 (0.8)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-AL

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Alabama

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Alabama	60.0 (1.8)	12.2 (1.0)	0.6 (0.2)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Alabama	19.5 (1.9)	1.5 (0.6)	0.1 (0.3)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Alabama	14.1 (4.9)	2.4 (1.4)	0.2 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Alabama	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Alabama	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Alabama	46.2 (1.5)	8.8 (0.8)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

"†" Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-AL

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Alabama

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Alabama †	61.5 (6.2)	21.9 (4.3)	2.3 (1.3)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Alabama †	36.8 (5.2)	7.2 (2.3)	0.2 (0.7)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Alabama †	37.6 (5.4)	4.6 (1.5)	0.0 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Alabama	46.8 (2.3)	7.8 (0.9)	0.2 (0.2)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Alabama	46.2 (1.5)	8.8 (0.8)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

"†" Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-AL

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Alabama

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Alabama	28.1 (3.2)	1.0 (1.0)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Alabama	37.4 (2.3)	3.9 (0.9)	0.1 (0.2)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Alabama	56.5 (3.0)	9.8 (1.4)	0.1 (0.5)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Alabama	58.0 (2.9)	16.5 (2.0)	1.1 (0.5)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Alabama	46.2 (1.5)	8.8 (0.8)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

Arkansas

In Arkansas, 49.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-AR). This is similar to the percentage for the Southeast region (53.5 percent) and higher than that for the nation as a whole (41.8 percent). Just over two-fifths (41.3 percent) of the students are performing at the basic level. Another 10 percent of the students (9.5 percent) in this state are able to satisfy the requirements set for the proficient level, while 0.2 percent meet the standards for the advanced level.

Figure 3.2-AR and the tables for Arkansas present the information in terms of the percentages of students "at or above" each achievement level. Fifty-one percent of Arkansas students are at or above the basic level. Nearly 10 percent (9.7 percent) of Arkansas's Grade 8 students are at or above the proficient level. Again, this is similar to the regional estimate but below the national figures (11.3 and 15.5 percent, respectively). In Grade 8, 0.2 percent of the students in Arkansas reach the advanced level, nearly the same as the percentage for the Southeast region but below the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that only about one-half of the Grade 8 students in Arkansas can be expected to solve simple problems involving addition, subtraction, multiplication, and division. These students are also likely to be able to use basic geometric terms and identify elementary geometric figures. About one-tenth of the students (those at or above the proficient level) can be expected to translate verbal problems into simple algebraic expressions and solve problems using decimals, fractions, or proportions. A very small percentage are likely to be able to use scale drawings, metric measurement, or other more advanced mathematical concepts.

Figure 3.1-AR

Percentage of Students Below Basic and Within Each Achievement Level for Arkansas

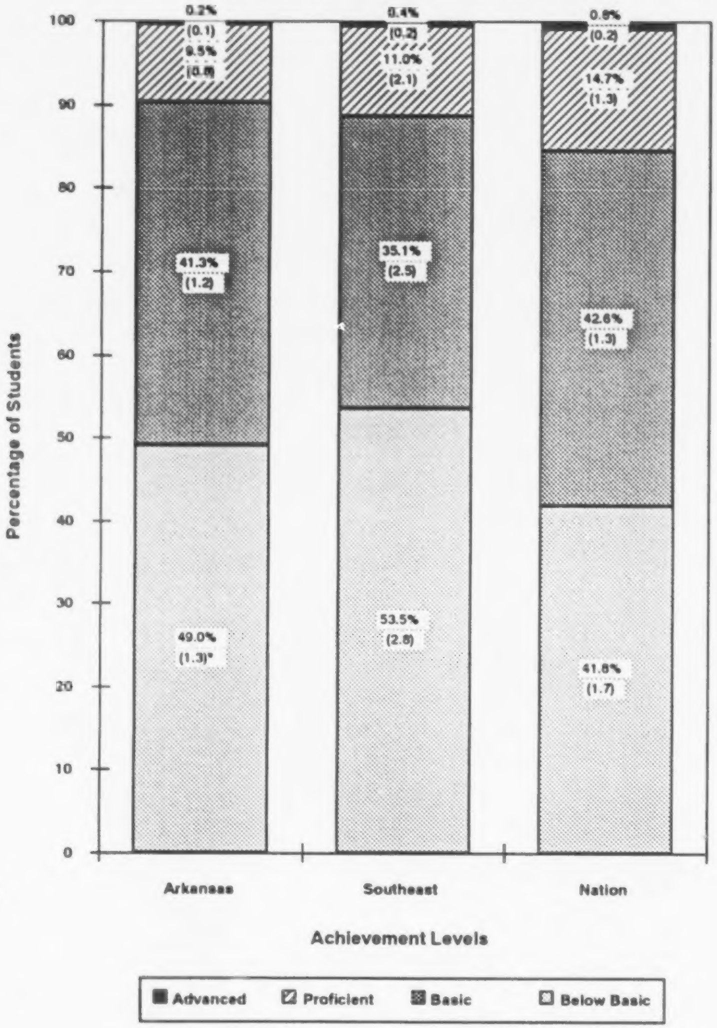
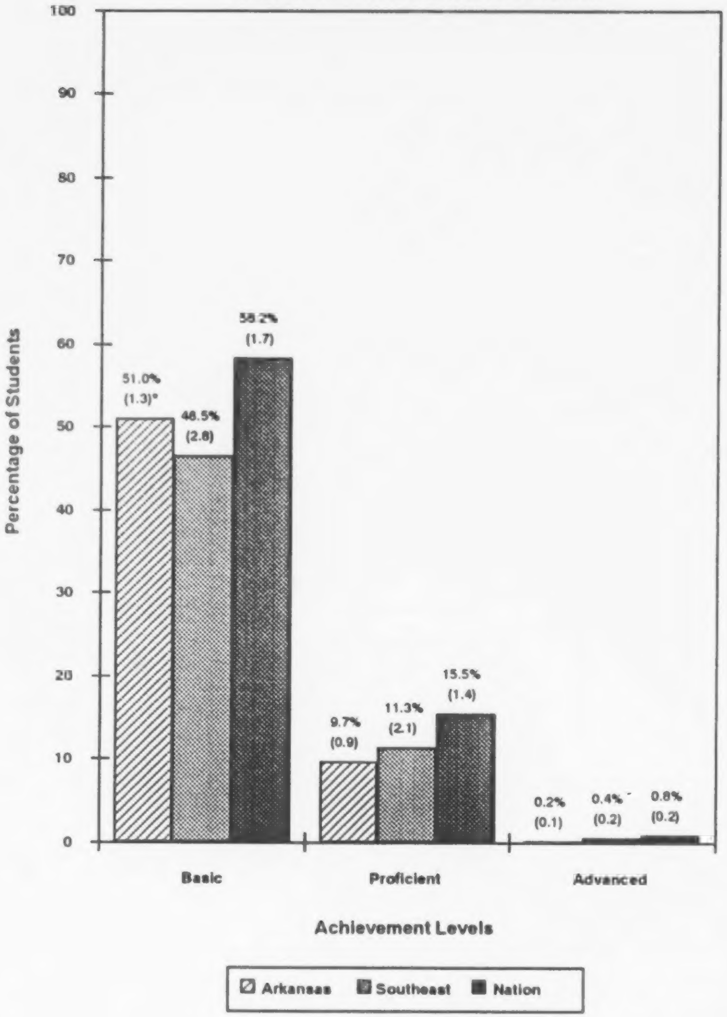


Figure 3.2-AR

Percentage of Students At or Above Grade 8 Achievement Levels for Arkansas



* Standard errors are shown in parentheses

The results for Arkansas have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[14] Tables 3.1-AR through 3.4-AR present these findings for Arkansas and the most significant relationships are summarized below.

Male students in Arkansas are more likely than female students to be at or above the proficient level (see Table 3.1-AR). There is no significant difference, however, in the percentages of males and females at or above the basic level. Arkansas students of either gender, however, are less likely than their national counterparts to be at or above the proficient levels. Female students in Arkansas are also less likely to be at or above the basic level than are female students across the nation.

Whites, Blacks and Hispanics are the major race/ethnic groups in Arkansas. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-AR). Students in all three of Arkansas' major ethnic groups are less likely to be at or above the basic level than their national counterparts. Whites and Blacks in Arkansas are also less likely to be at or above the proficient level than White and Black students in the nation as a whole.

In Arkansas, students from advantaged urban communities are more likely to be at or above the basic level than are students from other communities (see Table 3.3-AR). Arkansas students from extreme rural communities are the less likely to be at or above the basic and proficient levels than students from advantaged urban or "other" communities. Students from extreme rural communities in Arkansas, however, are about as likely to be performing at or above the basic and proficient levels as students from similar communities across the nation.

In Arkansas, as in the rest of the nation, student performance is strongly related to parental education. Students in Arkansas whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see

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[14] See Appendix B for complete definitions of these subpopulations.

Table 3.1-AR

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Arkansas

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Arkansas	52.4 (2.0)	11.4 (1.3)	0.3 (0.2)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Arkansas	49.5 (1.7)	8.0 (0.9)	0.1 (0.1)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Arkansas	51.0 (1.3)	9.7 (0.9)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-AR

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Arkansas

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Arkansas	63.7 (1.2)	13.0 (1.1)	0.3 (0.2)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Arkansas	15.4 (1.6)	0.3 (0.3)	0.0 (0.0)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Arkansas	16.8 (5.1)	1.4 (1.4)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Arkansas	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Arkansas	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	0.0 (0.0)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Arkansas	51.0 (1.3)	9.7 (0.9)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-AR

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Arkansas

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Arkansas †	67.2 (5.8)	23.2 (7.1)	0.8 (1.1)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Arkansas †	29.1 (8.6)	3.1 (1.6)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Arkansas	49.7 (3.1)	5.8 (1.3)	0.1 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Arkansas	52.8 (1.8)	10.9 (1.2)	0.2 (0.2)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Arkansas	51.0 (1.3)	9.7 (0.9)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-AR

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Arkansas

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Arkansas	35.3 (2.8)	2.0 (1.3)	0.1 (0.3)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Arkansas	41.9 (2.0)	3.5 (0.8)	0.0 (0.0)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Arkansas	66.1 (2.7)	12.9 (1.8)	0.2 (0.0)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Arkansas	64.9 (2.1)	19.1 (1.4)	0.4 (0.3)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Arkansas	51.0 (1.3)	9.7 (0.9)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

Table 3.4-AR). Other differences in parental education, while suggestive, do not meet the criteria for drawing inferences. Arkansas students whose parents are high school graduates (with no additional education) or college graduates, are less likely to be at or above the basic and proficient levels than their national counterparts.

California

In California, 49.4 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-CA). This is above the percentage for the nation as a whole (41.8 percent). Over one-third (36.7 percent) of the students are performing at the basic level. Another one-eighth (13.2 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.7 percent meet the standards for the advanced level.

Figure 3.2-CA and the other tables for California present the information in terms of the percentages of students "at or above" each achievement level. Just over one-half (50.6 percent) of California students are at or above the basic level. This is below the rate for the nation as a whole (58.2 percent). In Grade 8, 13.9 percent of the students in California are at or above the proficient level and 0.7 percent are at or above the advanced level. These figures are close to those for the West region and the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that about one-half of the students in California are likely to be able to know when and how to use a calculator, and are able to estimate to arrive at an answer. Nearly 14 percent of the students (those at or above the proficient level) can be expected to compute with integers and are likely to show an understanding of the basic concepts of probability. The advanced students in this state (less than 1 percent of the total) are likely to be able to solve problems involving concepts of probability and to be able to interpret line graphs.

Figure 3.1-CA

Percentage of Students Below Basic and Within Each Achievement Level for California

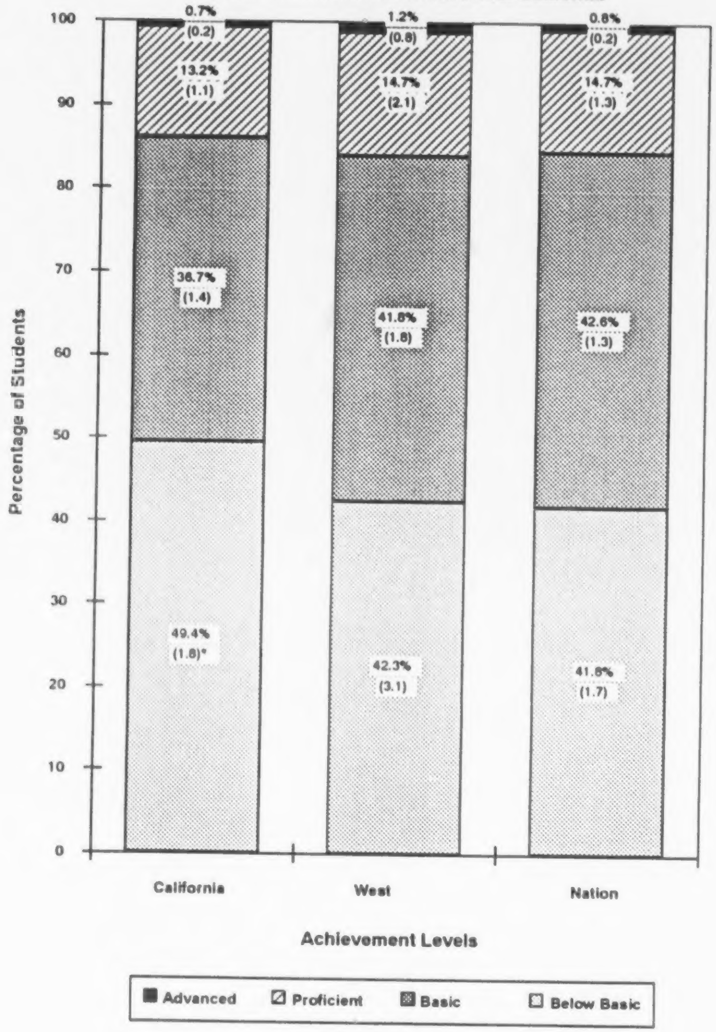
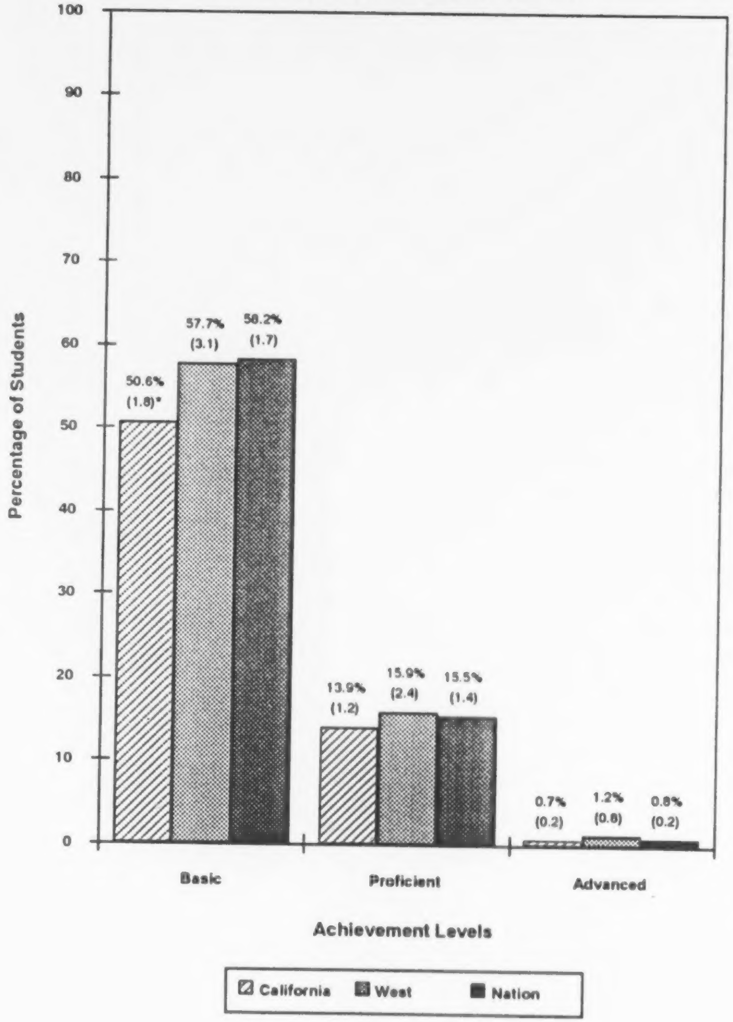


Figure 3.2-CA

Percentage of Students At or Above Grade 8 Achievement Levels for California



* Standard errors are shown in parentheses

The results for California have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[15] Tables 3.1-CA through 3.4-CA present these findings for California and the most significant relationships are summarized below.

Female students in California are as likely as male students to be at or above the basic, proficient, or advanced levels (see Table 3.1-CA). Female students in California are, however, less likely to be at or above the basic level than other female students across the nation.

Whites, Blacks, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in California. The percentage of White and Asian/Pacific Island students reaching the basic and proficient levels is higher than that of the other race/ethnic groups. The differences between Whites and Asian/Pacific Islanders are not statistically significant (see Table 3.2-CA). In California, the performance of each of the major ethnic groups is not significantly different than their performance in the West region or the nation as a whole.

In California, students from advantaged urban communities are more likely to be at or above the basic level than are students from other types of communities (see Table 3.3-CA). Students from disadvantaged urban communities are least likely to be at or above these same levels. Owing to the nature of the sample, however, these findings must be interpreted with caution. Students from "other" California communities are far less likely to be performing at or above the basic level than students from similar communities across the region and throughout the nation.

In California, as in the rest of the nation, student performance is strongly related to parental education. Students in California whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-CA). There are also significant differences in the percentage of students at or

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[15] See Appendix B for complete definitions of these subpopulations.

Table 3.1-CA

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

California

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
California	52.2 (2.2)	15.2 (1.6)	0.9 (0.3)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
California	48.8 (1.8)	12.5 (1.2)	0.4 (0.3)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
California	50.6 (1.8)	13.9 (1.2)	0.7 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-CA

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

California

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
California	69.8 (2.2)	21.4 (1.8)	1.1 (0.3)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
California	21.4 (3.7)	1.8 (1.1)	0.0 (0.0)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
California	26.0 (2.2)	3.1 (0.8)	0.0 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
California	67.1 (4.0)	24.9 (3.7)	1.6 (0.9)
West	*** (***)	*** (***)	*** (3.4)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
California	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
California	50.6 (1.8)	13.9 (1.2)	0.7 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-CA
Percentage of Students At or Above Achievement Levels By Type of Community
1990 NAEP Mathematics Assessment

California

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
California †	76.5 (4.2)	31.5 (4.2)	2.1 (1.1)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
California †	32.6 (6.3)	4.8 (1.6)	0.1 (0.0)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
California	*** (***)	*** (***)	*** (***)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
California	49.9 (2.5)	12.5 (1.3)	0.6 (0.3)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
California	50.6 (1.8)	13.9 (1.2)	0.7 (0.2)
West	57.7 (3.1)	15.9 (2.1)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-CA

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

California

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
California	26.7 (3.6)	2.8 (1.2)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
California	38.5 (2.7)	3.8 (1.1)	0.0 (0.0)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
California	60.5 (4.3)	14.5 (2.1)	0.8 (0.5)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
California	69.1 (2.3)	25.5 (2.1)	1.3 (0.4)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
California	50.6 (1.8)	13.9 (1.2)	0.7 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

above basic whose parents completed high school and those whose parents did not. Students whose parents are college graduates are also more likely to be at or above the proficient level than students whose parents had some education after high school, but no college degrees.

Colorado

In Colorado, 33.9 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-CO). This is substantially better than the percentage for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Almost one-half (47.9 percent) of the students are performing at the basic level. Another 17.7 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.6 percent meet the standards for the advanced level.

Figure 3.2-CO and the tables for Colorado present the information in terms of the percentages of students "at or above" each achievement level. Almost two-thirds (66.1 percent) of Colorado's students are at or above the basic level. This is higher than the regional and national percentages (57.7 and 58.2 percent, respectively). Nearly one-fifth (18.2 percent) of Colorado's Grade 8 students are at or above the proficient level, a rate similar to the West region and the entire nation. In Grade 8, 0.6 percent of the students in Colorado reach the advanced level, a percentage not significantly different from the West region and the nation.

These percentages at or above the basic, proficient, and advanced levels mean that nearly two-thirds of the public school students in Colorado can be expected to perform basic arithmetical operations, with or without a calculator. These same students are also likely to have a conceptual understanding of fundamental mathematical concepts such as place value, order of operations, and fractions. The nearly 20 percent of the students at or above the proficient level can be expected to solve more complex problems, classify geometric figures based on their properties, and show an understanding of the basic concepts of probability. The small percentage of students at the advanced level are likely to have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents. They can be expected to use scale drawings and solve problems involving concepts of probability.

Figure 3.1-CO

Percentage of Students Below Basic and Within Each Achievement Level for Colorado

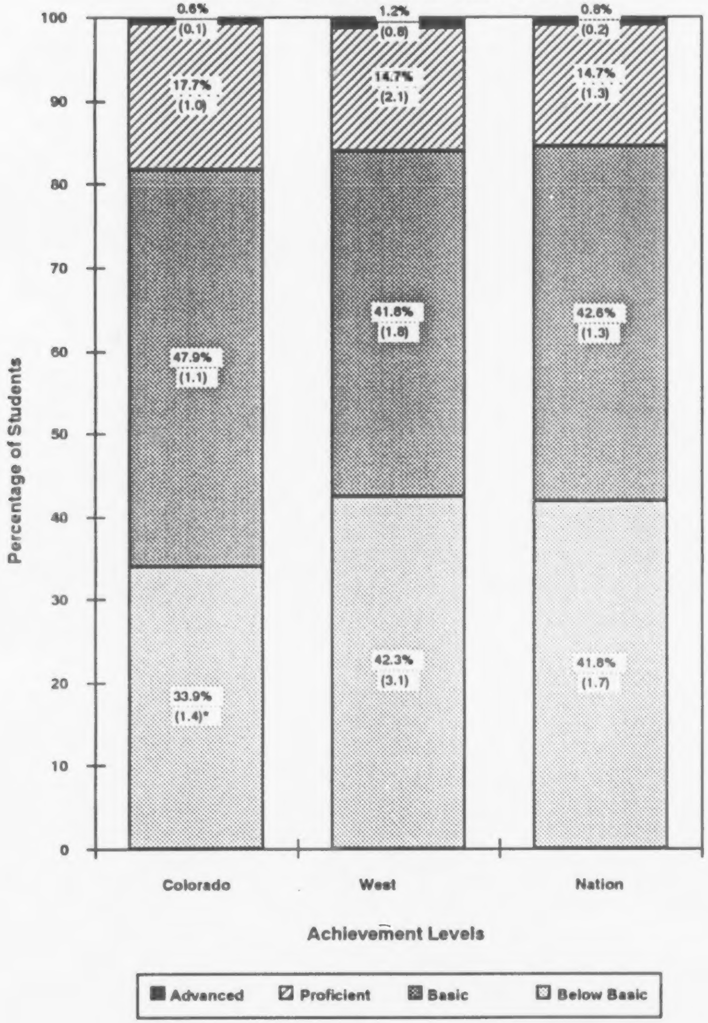
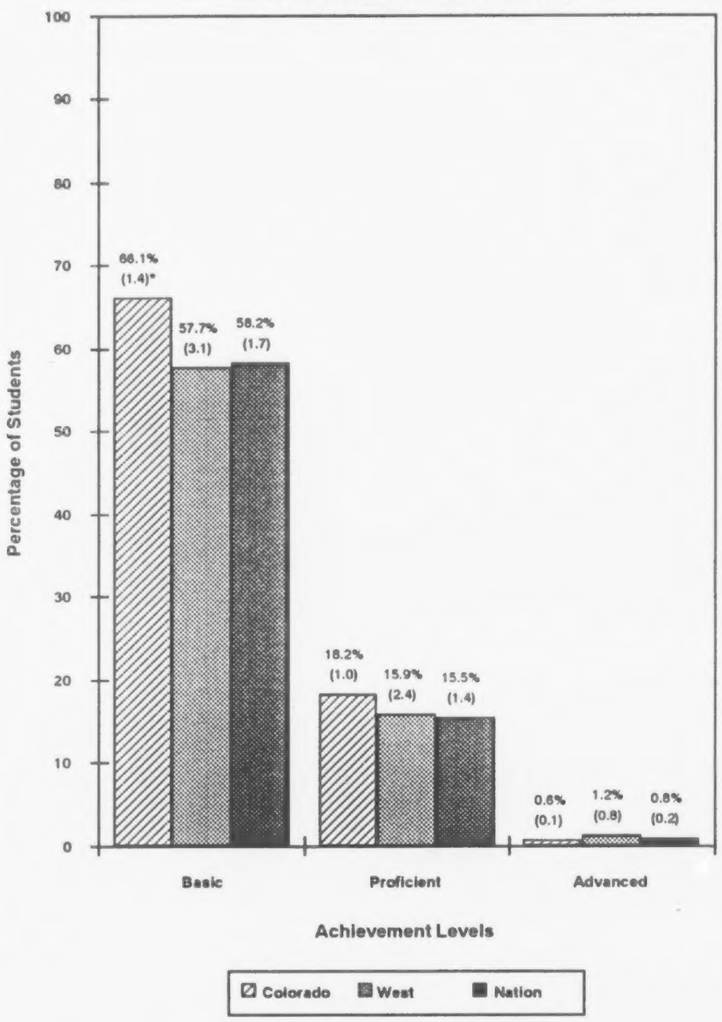


Figure 3.2-CO

Percentage of Students At or Above Grade 8 Achievement Levels for Colorado



* Standard errors are shown in parentheses

The results for Colorado have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[16] Tables 3.1-CO through 3.4-CO present these findings for Colorado and the most significant relationships are summarized below.

Male students in Colorado are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-CO). Colorado students of both genders, however, are more likely than their national counterparts to be at or above the basic level.

Whites, Hispanics and Blacks are the major race/ethnic groups in Colorado. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-CO). A larger percent of White students reach the basic level in Colorado than in the nation as a whole.

In Colorado, students from advantaged urban communities are more likely to be at or above the basic level than are students from extreme rural or "other" communities (see Table 3.3-CO). Advantaged urban students from Colorado are not appreciably different from their regional and national counterparts. Sample sizes limit the ability to generalize about disadvantaged urban communities in Colorado.

In Colorado, as in the rest of the nation, student performance is strongly related to parental education. Students in Colorado whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-CO). There are also significant differences in the percentage at or above basic for students whose parents completed high school and those whose parents did not. Students whose parents are college graduates are also more likely to be at or above the proficient level than students whose parents had some education after high school, but no college degrees.

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[16] See Appendix B for complete definitions of these subpopulations.

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Table 3.1-CO

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Colorado

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Male			
Colorado	67.7 (1.6)	19.6 (1.2)	0.8 (0.2)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Colorado	64.5 (2.0)	16.8 (1.7)	0.3 (0.2)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Colorado	66.1 (1.4)	18.2 (1.0)	0.6 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-CO

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Colorado

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Colorado	75.7 (1.3)	23.0 (1.3)	0.6 (0.2)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Colorado †	23.6 (6.0)	1.6 (1.4)	0.0 (0.0)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Colorado	38.1 (2.9)	3.4 (0.9)	0.2 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Colorado	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Colorado	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Colorado	66.1 (1.4)	18.2 (1.0)	0.6 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-CO

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Colorado

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Colorado	80.7 (2.4)	30.3 (2.6)	1.4 (0.6)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Colorado †	39.5 (5.0)	4.0 (3.2)	0.3 (0.0)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Colorado	67.1 (5.5)	14.3 (2.7)	0.1 (0.0)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Colorado	63.3 (2.5)	16.1 (1.2)	0.4 (0.4)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Colorado	66.1 (1.4)	18.2 (1.0)	0.6 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

Table 3.4-CO

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Colorado

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Colorado	32.2 (4.8)	3.3 (1.8)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Colorado	48.5 (2.7)	6.9 (1.8)	0.1 (0.0)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Colorado	73.2 (2.3)	18.3 (1.9)	0.5 (0.4)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Colorado	78.7 (1.5)	27.2 (1.6)	0.9 (0.2)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Colorado	66.1 (1.4)	18.2 (1.0)	0.6 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

Connecticut

In Connecticut, 32.7 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-CT). This is similar to the percentage for the Northeast region (33.1 percent) and better than that for the nation as a whole (41.8 percent). Over two-fifths (44.2 percent) of the students are performing at the basic level. Another one-fifth (21.2 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 2.0 percent meet the standards for the advanced level.

Figure 3.2-CT and the tables for Connecticut present the information in terms of the percentages of students "at or above" each achievement level. Just over two-third (67.3 percent) of Connecticut's students are at or above the basic level. Almost one-fourth (23.1 percent) of Connecticut's Grade 8 students are at or above the proficient level. In both cases, Connecticut's percentage is higher than those of the entire nation (58.2 and 15.5 percent, respectively). In Grade 8, 2.0 percent of the students in Connecticut reach the advanced level, a higher percentage than that of the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that two-thirds of the Grade 8 public school students in Connecticut are likely to be able to interpret bar graphs, make conversions between units of measurement, and identify elementary geometric figures. The students at or above the proficient level (approximately one-fourth of the total) can be expected to solve problems requiring decimals, fractions, and proportions, along with the translation of verbal problem situations into simple algebraic expressions. The nearly 2 percent of the students at the advanced level are likely to be able to solve problems involving elementary concepts of probability.

Figure 3.1-CT

Percentage of Students Below Basic and Within Each Achievement Level for Connecticut

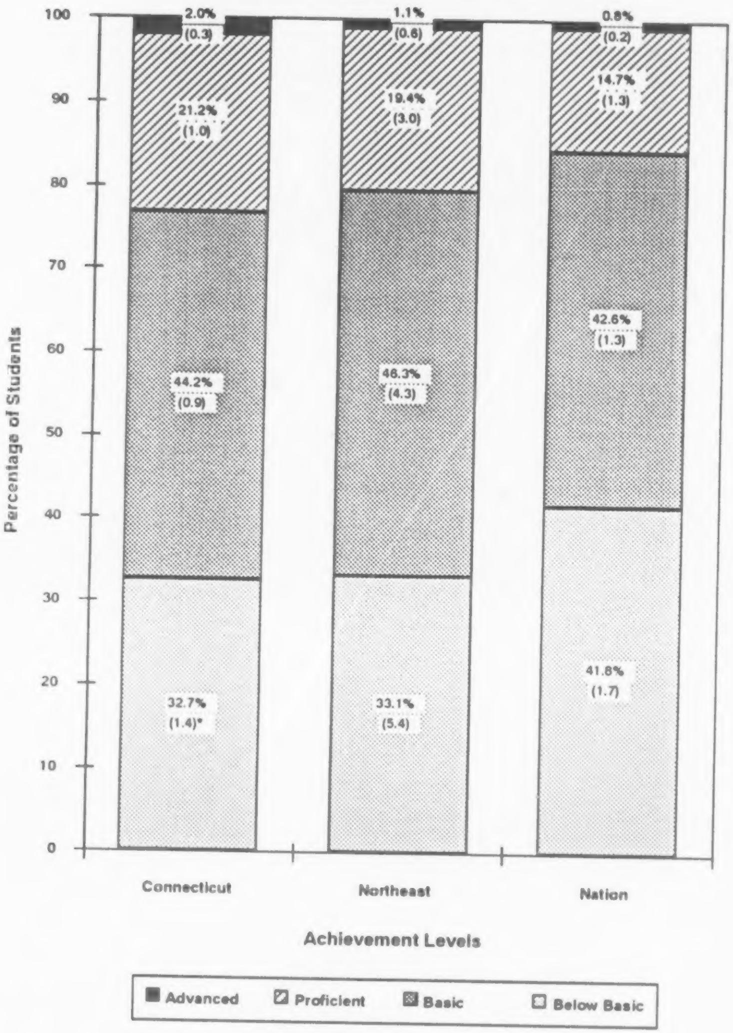
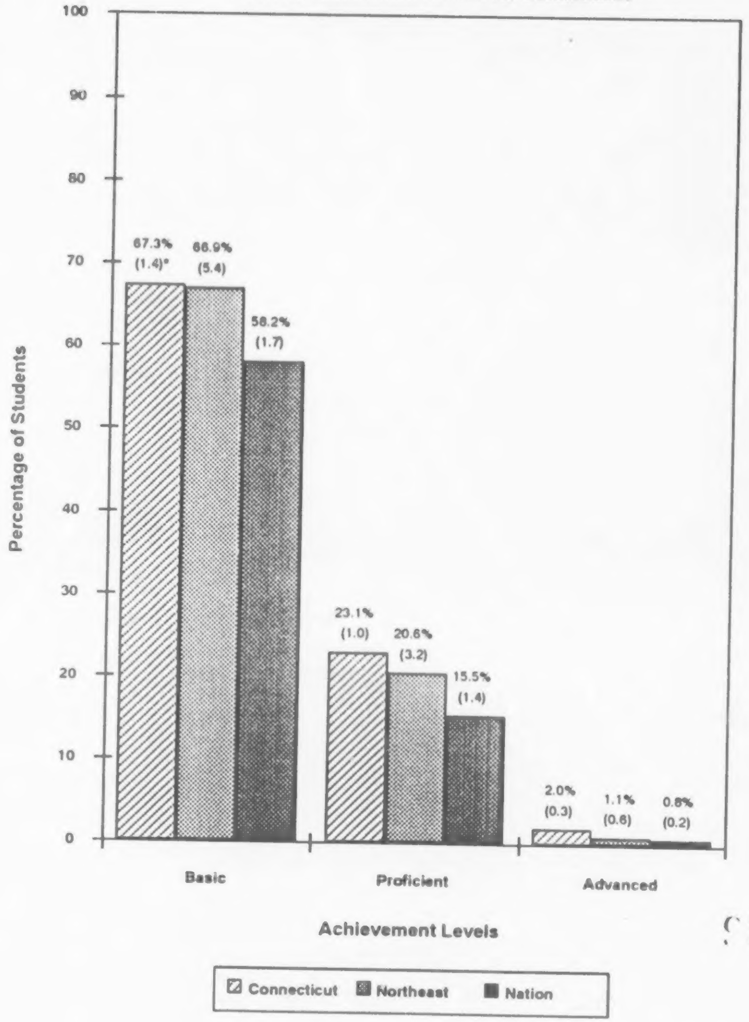


Figure 3.2-CT

Percentage of Students At or Above Grade 8 Achievement Levels for Connecticut



* Standard errors are shown in parentheses

The results for Connecticut have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[17] Tables 3.1-CT through 3.4-CT present these findings for Connecticut and the most significant relationships are summarized below.

Male students in Connecticut are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-CT). Connecticut students of both genders, however, are far more likely than their national counterparts to be at or above the basic and proficient levels.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Connecticut. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-CT). A larger percent of White and students reach the basic and proficient levels in Connecticut than in the nation as a whole.

In Connecticut, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than are students from disadvantaged urban or "other" communities (see Table 3.3-CT). Students from "other" Connecticut communities (neither advantaged/disadvantaged urban nor extreme rural) are more likely to be at or above the basic and proficient levels than students from similar communities across the nation.

In Connecticut, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at each increment in the measure of parental education (see Table 3.4-CT). Students whose parents are college graduates also had the highest percentage at or above the advanced level. Furthermore, Connecticut students whose parents are college graduates are also more likely to be at or above the basic, proficient, and advanced levels than students from similar family background in the nation as a whole.

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[17] See Appendix B for complete definitions of these subpopulations.

Table 3.1-CT

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Connecticut

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Connecticut	68.3 (1.5)	24.4 (1.3)	2.3 (0.5)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Connecticut	66.5 (1.8)	21.9 (1.4)	1.7 (0.4)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Connecticut	67.3 (1.4)	23.1 (1.0)	2.0 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-CT

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Connecticut

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Connecticut	77.4 (1.2)	27.8 (1.1)	2.3 (0.3)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Connecticut	32.3 (4.1)	3.7 (1.7)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Connecticut	24.2 (3.6)	2.7 (1.4)	0.3 (0.4)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Connecticut	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Connecticut	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Connecticut	67.3 (1.4)	23.1 (1.0)	2.0 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-CT

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Connecticut

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Connecticut	85.0 (2.1)	37.0 (2.2)	4.1 (0.9)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Connecticut	26.5 (4.2)	2.6 (1.4)	0.0 (0.0)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Connecticut	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Connecticut	68.3 (1.7)	19.8 (1.2)	0.9 (0.4)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Connecticut	67.3 (1.4)	23.1 (1.0)	2.0 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-CT

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Connecticut

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Connecticut	29.8 (4.8)	1.8 (1.2)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Connecticut	53.2 (3.0)	8.9 (1.3)	0.2 (0.4)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Connecticut	69.2 (2.5)	18.9 (2.2)	0.9 (0.5)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Connecticut	82.7 (1.3)	37.0 (1.4)	3.7 (0.6)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Connecticut	67.3 (1.4)	23.1 (1.0)	2.0 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Delaware

In Delaware, 45.8 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-DE). This is substantially above the percentage for the Northeast region (33.1 percent), but similar to that for the nation as a whole (41.8 percent). Almost two-fifths (38.1 percent) of the students are performing at the basic level and 15.1 percent are able to satisfy the requirements set for the proficient level. In Delaware, 1.1 percent of the students meet the standards for the advanced level.

Figure 3.2-DE and the tables for Delaware present the information in terms of the percentages of students "at or above" each achievement level. Over one-half (54.2 percent) of Delaware's students are at or above the basic level while 16.1 percent of Delaware's Grade 8 students are at or above the proficient level. In both cases, Delaware's percentages are close to those for the entire nation. In Grade 8, 1.1 percent of the students in Delaware reach the advanced level, the same as the percentage for the Northeast region and not significantly above the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that about one-half of the students in Delaware are likely to be able to know when and how to use a calculator, and are able to estimate to arrive at an answer. Over 16 percent of the students (those at or above the proficient level) can be expected to compute with integers and are likely to show an understanding of the basic concepts of probability. The advanced students in this state are likely to be able to solve problems involving concepts of probability and to be able to interpret line graphs.

Figure 3.1-DE

Percentage of Students Below Basic and Within Each Achievement Level for Delaware

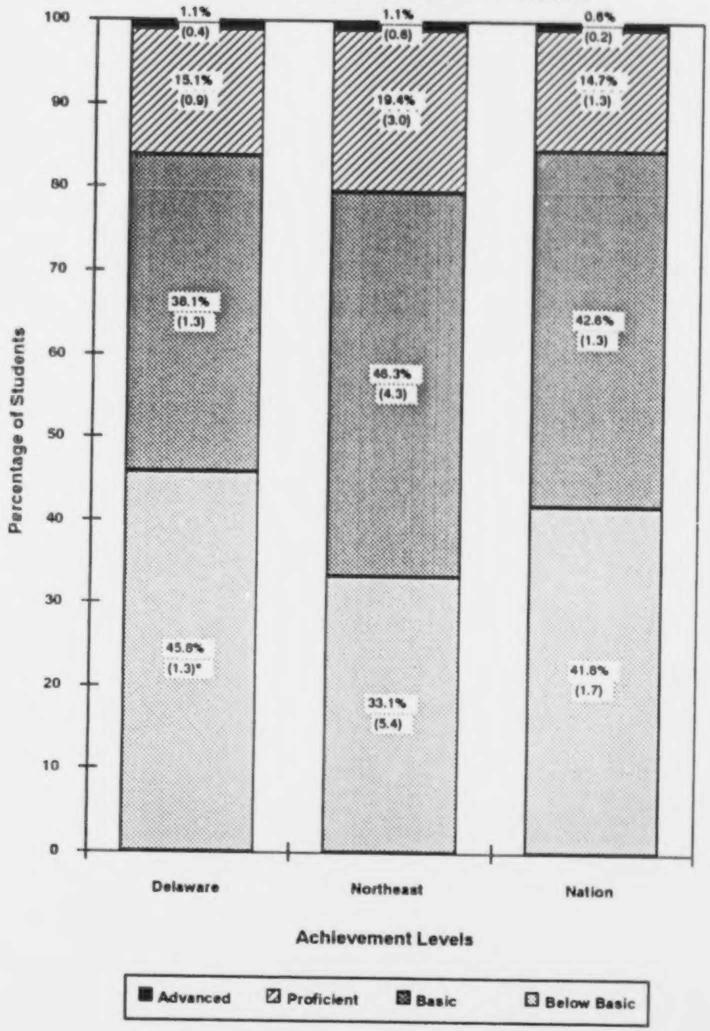
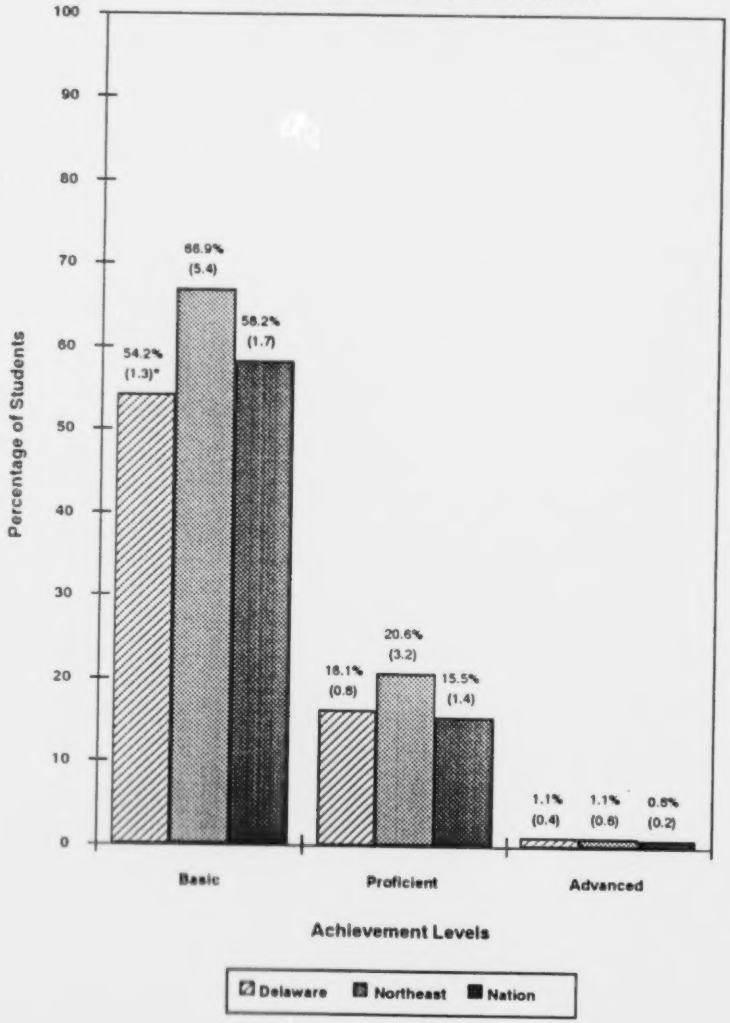


Figure 3.2-DE

Percentage of Students At or Above Grade 8 Achievement Levels for Delaware



* Standard errors are shown in parentheses

The results for Delaware have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[18] Tables 3.1-DE through 3.4-DE present these findings for Delaware and the most significant relationships are summarized below.

Male students in Delaware are no more likely than female students to be at or above the basic, proficient, or advanced level (see Table 3.1-DE). Female students in Delaware, however, are less likely than their regional counterparts to be at or above the basic level.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Delaware. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-DE). The percentages in each race/ethnic group at or above the basic and proficient levels in Delaware is similar to that for the nation as a whole.

In Delaware, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than are students from extreme rural or "other" communities (see Table 3.3-DE). In Delaware, the performance of students from advantaged urban and extreme communities does not differ significantly from that of their regional or national counterparts.

In Delaware, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at almost every increment in the measure of parental education. Students whose parents are college graduates also had the highest percentage at or above the advanced level (see Table 3.4-DE). At almost every level of parental education, however, students from Delaware are no more or less likely to reach the basic and proficient levels than their national or regional counterparts.

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[18] See Appendix B for complete definitions of these subpopulations.

Table 3.1-DE

Percentage of Students At or Above Achievement Levels By Gender 1990 NAEP Mathematics Assessment

Delaware

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Delaware	53.0 (2.2)	16.6 (1.4)	1.4 (0.7)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Delaware	55.5 (2.0)	15.7 (1.2)	0.7 (0.5)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Delaware	54.2 (1.3)	16.1 (0.8)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-DE

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Delaware

	GRADE 8 ACHIEVEMENT LEVEL		
RACE/ETHNICITY	Basic	Proficient	Advanced
White			
Delaware	64.0 (1.6)	20.8 (1.2)	1.4 (0.6)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Delaware	30.8 (2.4)	4.0 (1.5)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Delaware	29.5 (5.6)	6.0 (3.1)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Delaware	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Delaware	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Delaware	54.2 (1.3)	16.1 (0.8)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-DE

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Delaware

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advanced Urban			
Delaware	79.2 (5.2)	41.7 (3.3)	4.7 (3.0)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Delaware	*** (***)	*** (***)	*** (***)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Delaware	54.0 (2.4)	11.0 (1.5)	0.2 (0.3)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Delaware	51.4 (1.5)	14.7 (1.0)	0.9 (0.4)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Delaware	54.2 (1.3)	16.1 (0.8)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-DE

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Delaware

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Delaware	29.9 (5.0)	2.0 (1.1)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Delaware	40.6 (3.1)	5.6 (1.1)	0.1 (0.1)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Delaware	61.7 (3.9)	14.4 (2.3)	0.1 (0.2)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Delaware	70.8 (1.7)	30.5 (1.9)	2.7 (1.2)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Delaware	54.2 (1.3)	16.1 (0.8)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

The District of Columbia

In the District of Columbia, 80.8 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-DC). This is significantly above the percentage for the Northeast region (33.1 percent) and for the nation as a whole (41.8 percent). Almost one-sixth (16.4 percent) of the students are performing at the basic level. Another 2.3 percent of the students in the District are able to satisfy the requirements set for the proficient level, while 0.5 percent meet the standards for the advanced level.

Figure 3.2-DC and the tables for the District of Columbia present the information in terms of the percentages of students "at or above" each achievement level. Approximately one-fifth (19.2 percent) of the District of Columbia students are at or above the basic level. Almost 3 percent of the District of Columbia's Grade 8 students are at or above the proficient level. In both cases, this is lower than the regional and national percentages. In Grade 8, 0.5 percent of the students in the District of Columbia reach the advanced level, a rate not significantly different than that for the Northeast region (1.1 percent) or the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that about one-fifth of the students in the District of Columbia are likely to be able to use the four basic arithmetic operations for problem solving, or use rulers to calculate perimeters and areas of rectangular figures. Approximately 3 percent of the students can be expected to solve problems using decimals or fractions. Less than 1 percent of the students have a conceptual understanding of geometry, measurement, or probability.

Figure 3.1-DC

Percentage of Students Below Basic and Within Each Achievement Level for District of Columbia

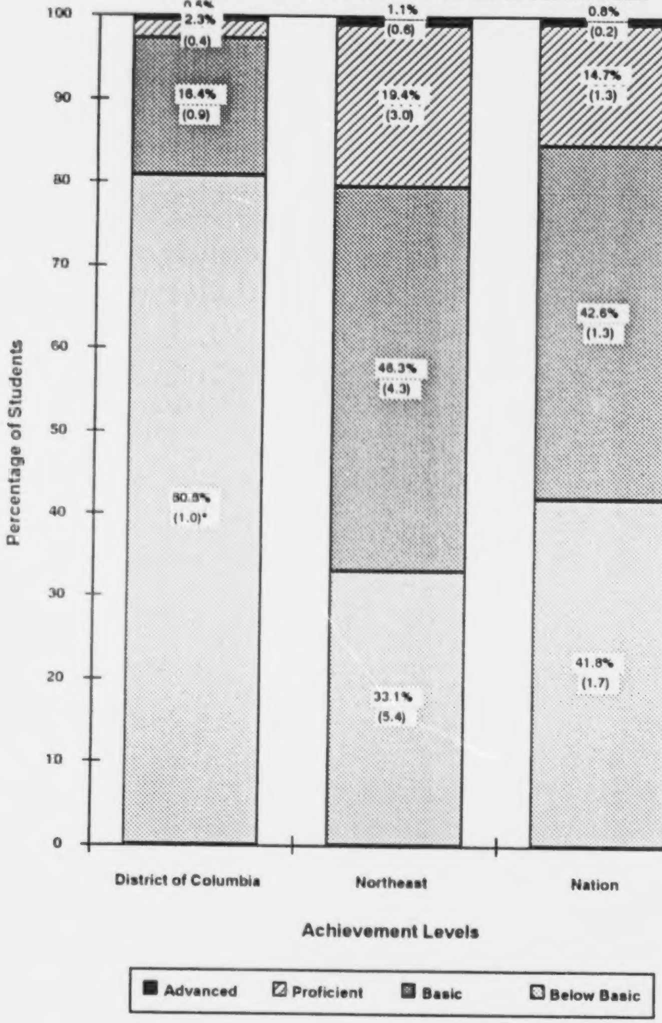
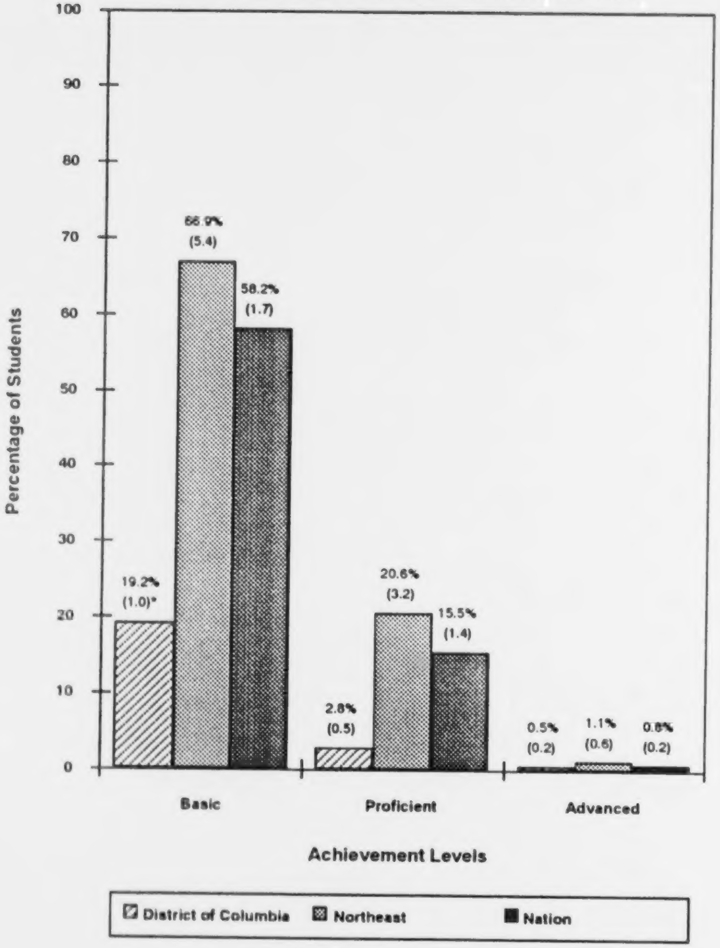


Figure 3.2-DC

Percentage of Students At or Above Grade 8 Achievement Levels for District of Columbia



* Standard errors are shown in parentheses

The results for the District of Columbia have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[19] Tables 3.1-DC through 3.4-DC present these findings for the District of Columbia and the most significant relationships are summarized below.

Male students in the District of Columbia are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-DC). The District of Columbia students of both genders, however, are less likely than their regional or national counterparts to be at or above the basic and proficient levels.

Blacks and Hispanics are the major race/ethnic groups in the District of Columbia schools. The percentage of Black students reaching the basic level is higher than that of the Hispanics (see Table 3.2-DC). There are no significant differences between these groups at the proficient and advanced levels. Blacks and Hispanics in the District of Columbia are less likely to be at or above the basic level than are members of these race/ethnic groups in the nation as a whole.

In the District of Columbia, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than are students from disadvantaged urban or "other" communities (see Table 3.3-DC). Students from the each type of community in the District of Columbia are less likely to be at or above the basic and proficient levels than their counterparts in similar communities in the northeast and the nation as a whole.

In the District of Columbia, student performance is related to parental education but not as strongly as in most of the states and the nation as a whole. Students in the District of Columbia whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic level than are students whose parents did not go beyond high school (see Table 3.4-DC). Students whose parents are

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[19] See Appendix B for complete definitions of these subpopulations.

Table 3.1-DC

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

District of Columbia

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
District Of Columbia	17.3 (1.2)	2.5 (0.8)	0.4 (0.3)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
District Of Columbia	20.9 (1.7)	3.1 (0.5)	0.5 (0.2)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
District Of Columbia	19.2 (1.0)	2.8 (0.5)	0.5 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-DC

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

District of Columbia

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
District Of Columbia	*** (***)	*** (***)	*** (***)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
District Of Columbia	17.5 (0.9)	1.0 (0.4)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
District Of Columbia	10.7 (2.6)	1.7 (1.1)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
District Of Columbia	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
District Of Columbia	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
District Of Columbia	19.2 (1.0)	2.8 (0.5)	0.5 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-DC

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

District of Columbia

	GRADE 8 ACHIEVEMENT LEVEL		
TYPE OF COMMUNITY	Basic	Proficient	Advanced
Advantaged Urban			
District Of Columbia	48.0 (3.5)	14.0 (3.0)	2.9 (1.2)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
District Of Columbia	12.1 (1.0)	0.7 (0.4)	0.0 (0.0)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
District Of Columbia	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
District Of Columbia	21.9 (3.9)	1.2 (0.9)	0.1 (0.4)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
District Of Columbia	19.2 (1.0)	2.8 (0.5)	0.5 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-DC

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

District of Columbia

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
District Of Columbia	11.8 (4.2)	0.2 (0.0)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
District Of Columbia	11.8 (1.6)	0.5 (0.3)	0.0 (0.0)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
District Of Columbia	26.1 (2.8)	1.8 (0.7)	0.1 (0.4)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
District Of Columbia	27.1 (2.0)	6.6 (1.3)	1.3 (0.5)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
District Of Columbia	19.2 (1.0)	2.8 (0.5)	0.5 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

college graduates are more likely to be at or above the proficient level than other students. None of the other differences in parental education meet the statistical criteria for drawing inferences. At almost every level of parental education, however, students from the District of Columbia are less likely to reach the basic and proficient levels than their national or regional counterparts.

Florida

In Florida, 51.5 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-FL). This is similar to the percentage for the Southeast region (53.5 percent) and above that for the nation as a whole (41.8 percent). Over one-third (35.7 percent) of the students are performing at the basic level. Approximately one-eighth (12.4 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.4 percent meet the standards for the advanced level.

Figure 3.2-FL and the tables for Florida present the information in terms of the percentages of students "at or above" each achievement level. Almost one-half (48.5 percent) of Florida's students are at or above the basic level. This is very similar to the figure for the Southeast region (46.5 percent), but below the rate for the nation as a whole (58.2 percent). Over one-eighth (12.8 percent) of Florida's Grade 8 students are at or above the proficient level. This is quite close to the regional and national percentages (11.3 and 15.5 percent, respectively). In Grade 8, 0.4 percent of the students in Florida reach the advanced level, approximately the same as the percentages for the Southeast region and the nation as a whole).

These percentages at or above the basic, proficient, and advanced levels mean that only about one-half of the Grade 8 students in Florida can be expected to solve simple problems involving addition, subtraction, multiplication, and division. These students are also likely to be able to use basic geometric terms and identify elementary geometric figures. About one-eighth of the students (those at or above the proficient level) can be expected to translate verbal problems into simple algebraic expressions and solve problems using decimals, fractions, or proportions. A very small percentage are likely to be able to use scale drawings, metric measurement, or other more advanced mathematical concepts.

Figure 3.1-FL

Percentage of Students Below Basic and Within Each Achievement Level for Florida

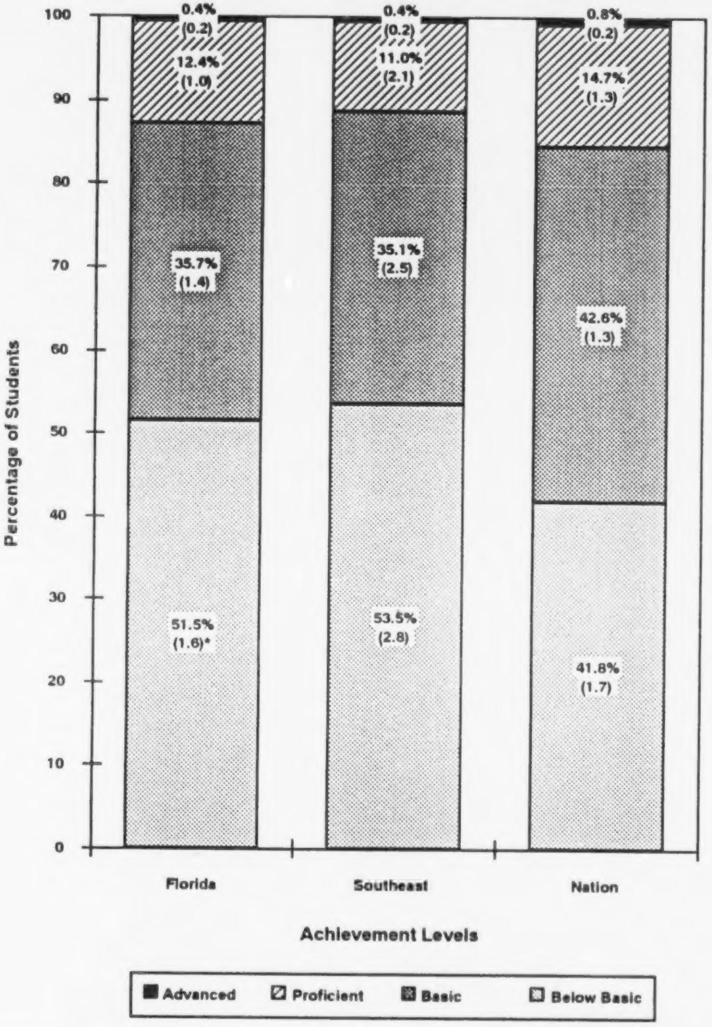
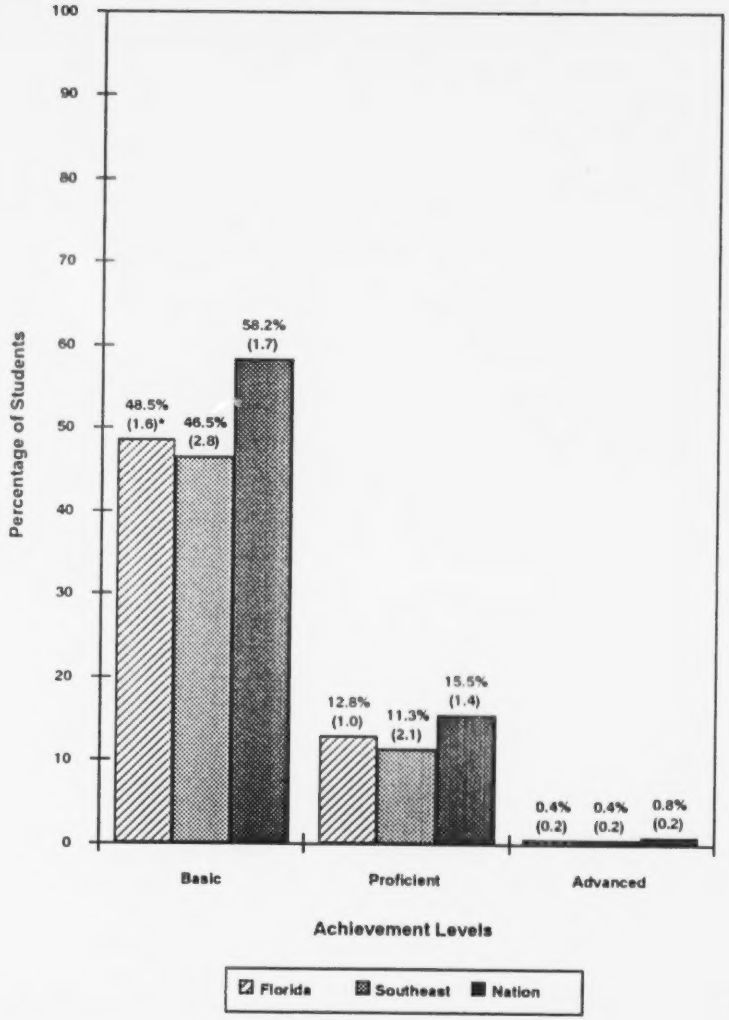


Figure 3.2-FL

Percentage of Students At or Above Grade 8 Achievement Levels for Florida



* Standard errors are shown in parentheses

The results for Florida have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[20] Tables 3.1-FL through 3.4-FL present these findings for Florida and the most significant relationships are summarized below.

Male students in Florida are more likely than female students to be at or above the proficient level (see Table 3.1-FL). There is no significant difference, however, in the percentages of males and females at or above the basic or advanced levels. Florida students of both genders, however, are less likely than their national counterparts to be at or above the basic and proficient levels.

Whites, Blacks, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in Florida. The percentages of White and Asian/Pacific Island students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-FL). A larger percentage of Hispanic students reach the proficient level in Florida than in the nation as a whole. The number of White students at or above the basic level in Florida, however, is lower than the comparable figure for the entire nation.

In Florida, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than are students from other types of communities (see Table 3.3-FL). Disadvantaged urban communities have the lowest percentages performing at or above the basic and proficient levels than all other community types in Florida. Florida students from disadvantaged urban communities are also less likely to be at or above the basic level than are students from similar communities throughout the nation.

In Florida, as in the rest of the nation, student performance is strongly related to parental education. Students in Florida whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-FL). Students whose parents are college graduates are also more likely to be at or

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[20] See Appendix B for complete definitions of these subpopulations.

Table 3.1-FL

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Florida

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Florida	49.7 (2.1)	14.9 (1.3)	0.6 (0.3)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Florida	47.2 (1.8)	10.6 (1.1)	0.2 (0.2)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Florida	48.5 (1.6)	12.8 (1.0)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-FL

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Florida

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Florida	61.5 (2.0)	17.1 (1.5)	0.7 (0.2)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Florida	18.6 (2.3)	2.0 (0.8)	0.0 (0.0)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Florida	34.8 (3.2)	8.5 (1.3)	0.1 (0.3)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Florida	66.9 (5.6)	28.7 (6.3)	0.3 (1.7)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Florida	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Florida	48.5 (1.6)	12.8 (1.0)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-FL

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Florida

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advanced Urban			
Florida †	70.0 (3.0)	22.6 (3.0)	1.0 (0.7)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Florida	27.5 (2.7)	4.5 (1.3)	0.1 (0.4)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Florida †	40.7 (2.9)	7.8 (3.2)	0.0 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Florida	50.3 (2.6)	13.6 (1.6)	0.5 (0.2)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Florida	48.5 (1.6)	12.8 (1.0)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-FL

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Florida

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Florida	26.1 (4.1)	3.0 (1.7)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Florida	35.0 (2.1)	5.7 (1.1)	0.2 (0.2)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Florida	59.5 (3.5)	15.0 (2.2)	0.4 (0.4)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Florida	62.9 (2.0)	21.5 (1.7)	0.9 (0.4)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Florida	48.5 (1.6)	12.8 (1.0)	0.4 (0.2)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

above the proficient level than are students whose parents have some education after high school, but no college degrees. Florida students whose parents are college graduates are less likely to be at or above the basic level than their national counterparts. A similar pattern is also found for those students whose parents' highest level of education is a high school diploma.

Georgia

In Georgia, 47.1 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-GA). This is similar to the percentage for the Southeast region (53.5 percent) and above that for the nation as a whole (41.8 percent). Almost two-fifths (38.2 percent) of the students are performing at the basic level. Another one-eighth (13.7 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 1.0 percent meet the standards for the advanced level.

Figure 3.2-GA and the tables for Georgia present the information in terms of the percentages of students "at or above" each achievement level. Just over half (52.9 percent) of Georgia's students are at or above the basic level. This is similar to the regional rate (46.5 percent) but below the national rate (58.2 percent). The percentage of Georgia's Grade 8 students at or above the proficient level (14.7 percent) is similar to that for the entire nation (15.5 percent). In Grade 8, 1.0 percent of the students in Georgia reach the advanced level, approximately the same percentage as for the Southeast region and the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that about one-half of the students in Georgia are likely to be able to know when and how to use a calculator, and are able to estimate to arrive at an answer. Over 14 percent of the students (those at or above the proficient level) can be expected to compute with integers and are likely to show an understanding of the basic concepts of probability. The advanced students in this state are likely to be able to solve problems involving concepts of probability and to be able to interpret line graphs.

Figure 3.1-GA

Percentage of Students Below Basic and Within Each Achievement Level for Georgia

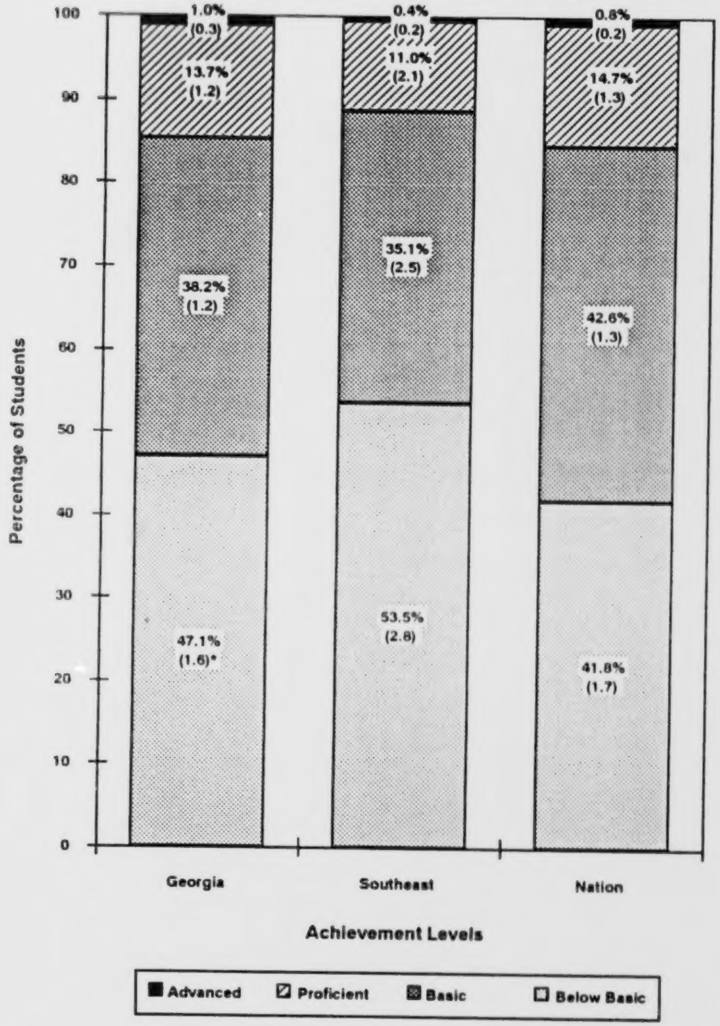
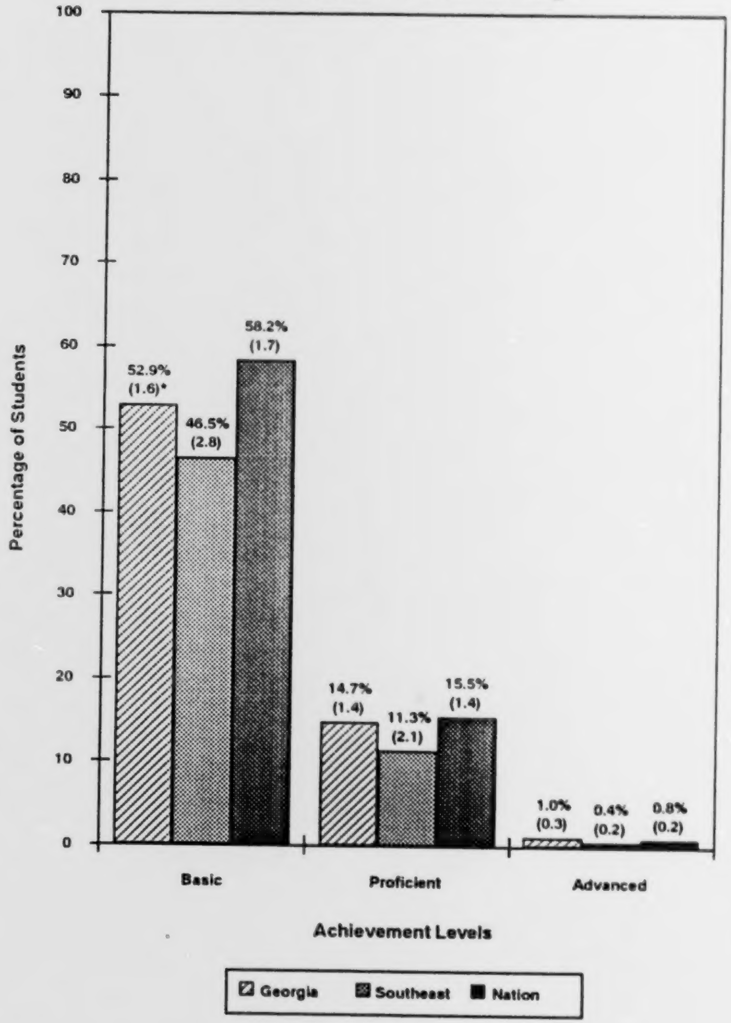


Figure 3.2-GA

Percentage of Students At or Above Grade 8 Achievement Levels for Georgia



* Standard errors are shown in parentheses

The results for Georgia have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[21] Tables 3.1-GA through 3.4-GA present these findings for Georgia and the most significant relationships are summarized below.

Male students in Georgia are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-GA). Female students in Georgia, however, are less likely than their national counterparts to be at or above the basic level.

Whites, Blacks and Hispanics are the major race/ethnic groups in Georgia. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-GA). A larger percent of White students also reach the basic level in Georgia than in the Southeast region.

In Georgia, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than are students from other types of communities (see Table 3.3-GA). In Georgia, the performance of students from advantaged urban communities, disadvantaged urban communities, and extreme rural communities is not appreciably different from that of their counterparts in similar communities across the nation.

In Georgia, as in the rest of the nation, student performance is strongly related to parental education. Students in Georgia whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic level than are students whose parents did not go beyond high school. There are significant increases in the percentage of students at the proficient level at each increment in the measure of parental education. Students whose parents are college graduates also have a higher percentage at or above the advanced level than students whose parents had no postsecondary education (see Table 3.4-GA). At almost every level of parental education, students from Georgia are about as likely to reach the basic and proficient levels as their national or regional counterparts. The two exceptions involve the basic level. Georgia

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[21] See Appendix B for complete definitions of these subpopulations.

Table 3.1-GA

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Georgia

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Georgia	53.3 (1.8)	15.4 (1.8)	1.4 (0.6)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Georgia	52.6 (2.1)	14.0 (1.5)	0.7 (0.3)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Georgia	52.9 (1.6)	14.7 (1.4)	1.0 (0.3)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-GA

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

Georgia

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Georgia	69.1 (1.5)	21.7 (1.9)	1.6 (0.5)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Georgia	28.0 (2.3)	3.0 (0.8)	0.1 (0.1)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Georgia	22.7 (4.6)	2.0 (1.5)	0.1 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Georgia	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Georgia	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Georgia	52.9 (1.6)	14.7 (1.4)	1.0 (0.3)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-GA

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Georgia

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Georgia †	83.8 (2.3)	39.6 (4.6)	5.0 (1.7)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Georgia †	35.5 (5.0)	3.6 (2.2)	0.2 (0.4)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Georgia	45.8 (3.2)	9.8 (2.2)	0.7 (0.6)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Georgia	50.7 (2.2)	12.0 (1.3)	0.5 (0.2)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Georgia	52.9 (1.6)	14.7 (1.4)	1.0 (0.3)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-GA

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Georgia

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Georgia	34.8 (2.8)	1.9 (1.1)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Georgia	39.2 (2.2)	6.8 (1.0)	0.2 (0.1)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Georgia	64.6 (3.0)	17.3 (1.7)	1.4 (0.8)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Georgia	67.8 (2.3)	25.6 (3.0)	2.1 (0.6)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Georgia	52.9 (1.6)	14.7 (1.4)	1.0 (0.3)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

students whose parents did not finish high school are more likely to reach the basic level than similar students in the Southeast region. Georgia students whose parents' formal education ended with high school graduation are less likely to be at or above the basic level than their counterparts across the nation as a whole.

Hawaii

In Hawaii, 56.2 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-HI). This is substantially above the percentage for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Almost one-third (31.3 percent) of the students are performing at the basic level. Another 11.6 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.9 percent meet the standards for the advanced level.

Figure 3.2-HI and the tables for Hawaii present the information in terms of the percentages of students "at or above" each achievement level. More than two-fifths (43.8 percent) of Hawaii's students are at or above the basic level. This is well below the percentage for the West region (57.7 percent) and the nation (58.2 percent). One-eighth (12.5 percent) of Hawaii's Grade 8 students are at or above the proficient level. This is similar to the regional and national percentages (15.9 and 15.5 percent, respectively). In Grade 8, 0.9 percent of the students in Hawaii reach the advanced level, approximately the same percentage as the West region and the entire nation.

These percentages at or above the basic, proficient, and advanced levels mean that less than one-half of Hawaii's Grade 8 students are likely to be able to use the correct operations for solving one- and two-step problems or have a conceptual understanding of place value or fractions. Moreover, about one-eighth (those at or above the proficient level) are likely to be able to be able to read, interpret or construct line or circle graphs, or identify simple algebraic expressions. Very few students can be expected to solve a wide range of practical problems involving percents, proportions, or exponents.

Figure 3.1-HI

Percentage of Students Below Basic and Within Each Achievement Level for Hawaii

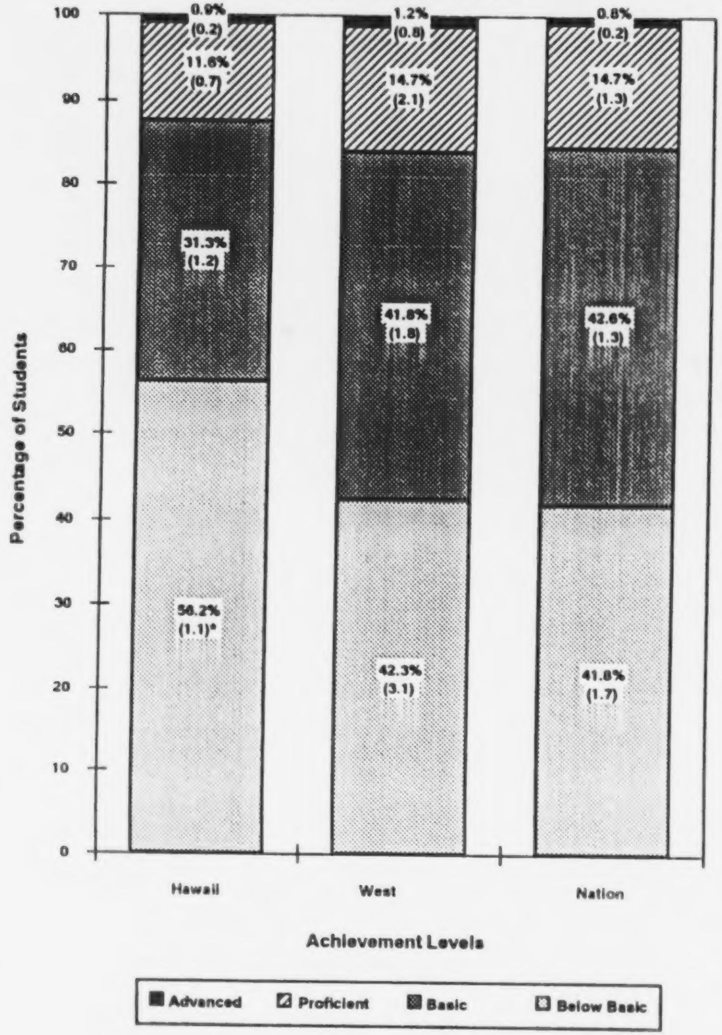
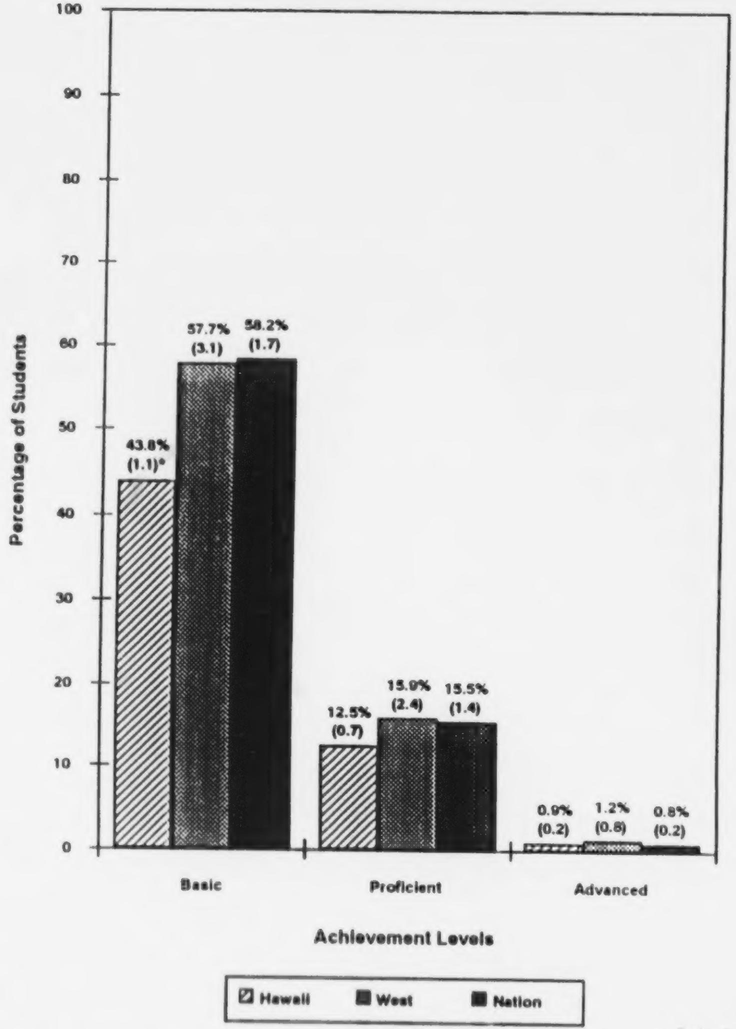


Figure 3.2-HI

Percentage of Students At or Above Grade 8 Achievement Levels for Hawaii



* Standard errors are shown in parentheses

The results for Hawaii have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[22] Tables 3.1-HI through 3.4-HI present these findings for Hawaii and the most significant relationships are summarized below.

In Hawaii, female students are more likely than male students to be at or above the basic level (see Table 3.1-HI). There are no significant differences, however, in the percentages of males and females at or above the proficient and advanced levels. Male students in Hawaii are far less likely to be at or above the basic and proficient levels than their regional or national counterparts. Female students, however, perform similarly to their counterparts in the West region and are below the national percentages only in terms of the percentage at or above basic.

Whites, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in Hawaii. The percentage of White students reaching the basic and proficient levels is higher than that of the Asian/Pacific Islanders. In Hawaii, a higher percentage of Asian/Pacific Island students reach the basic and proficient levels than Hispanics (see Table 3.2-HI). The percentage of Asian/Pacific Islanders reaching the basic and proficient levels in Hawaii is smaller than the comparable percentages for Asian/Pacific Islanders in the nation as a whole. Hispanics and Whites also have smaller percentages reaching the basic level in Hawaii than in the West region or the nation as a whole.

In Hawaii, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than those students from all other types of rural communities (see Table 3.3-HI). Students from disadvantaged urban communities are the least likely to be at or above the basic or proficient levels. In both advantaged and disadvantaged urban communities in Hawaii, however, lower percentages of students are at or above the basic level than their counterparts in the West region or in the nation as a whole.

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[22] See Appendix B for complete definitions of these subpopulations.

Table 3.1-HI

Percentage of Students At or Above Achievement Levels By Gender 1990 NAEP Mathematics Assessment

Hawaii

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Hawaii	39.4 (1.4)	11.4 (0.8)	1.0 (0.3)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Hawaii	48.7 (1.8)	13.8 (1.1)	0.8 (0.3)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Hawaii	43.8 (1.1)	12.5 (0.7)	0.9 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-HI

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Hawaii

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Hawaii	56.6 (2.5)	18.0 (2.4)	1.3 (0.6)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Hawaii	*** (***)	*** (***)	*** (***)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Hawaii	19.4 (2.9)	3.5 (1.3)	0.1 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Hawaii	44.9 (1.4)	13.1 (0.7)	0.9 (0.3)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Hawaii	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Hawaii	43.8 (1.1)	12.5 (0.7)	0.9 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-HI

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Hawaii

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL Basic	Proficient	Advanced
Advantaged Urban			
Hawaii	62.8 (2.3)	27.5 (4.2)	1.6 (1.4)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Hawaii	26.6 (2.8)	3.8 (1.1)	0.1 (0.0)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Hawaii	*** (***)	*** (***)	*** (***)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Hawaii	46.3 (1.5)	13.2 (1.0)	1.0 (0.3)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Hawaii	43.8 (1.1)	12.5 (0.7)	0.9 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-HI

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Hawaii

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Hawaii	25.1 (4.5)	6.6 (2.3)	0.4 (0.8)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Hawaii	32.0 (2.0)	5.5 (1.1)	0.2 (0.2)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Hawaii	54.7 (3.0)	15.0 (2.4)	0.7 (0.4)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Hawaii	56.0 (1.9)	20.5 (1.5)	1.8 (0.6)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Hawaii	43.8 (1.1)	12.5 (0.7)	0.9 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

In Hawaii, as in the rest of the nation, student performance is strongly related to parental education. Students in Hawaii whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than those students whose parents did not go beyond high school (see Table 3.4-HI). In Hawaii, students whose parents are college graduates are more likely to be at or above the advanced level than students whose parents' formal education ended with high school graduation. At almost every level of parental education, however, students from Hawaii are less likely to reach the basic and proficient levels than their national or regional counterparts.

Idaho

In Idaho, 26.3 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-ID). This is substantially better than the percentage for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Over one-half (54.2 percent) of the students are performing at the basic level. Almost one-fifth (19.1 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.5 percent meet the standards for the advanced level.

Figure 3.2-ID and the tables for Idaho present the information in terms of the percentages of students "at or above" each achievement level. Almost three-fourths (73.7 percent) of Idaho's students are at or above the basic level. This is well above comparable figures for the West region and the nation. Nearly one-fifth (19.5 percent) of Idaho's Grade 8 students are at or above the proficient level. This is also above the percentage for the entire nation (15.5 percent). In Grade 8, 0.5 percent of the students in Idaho reach the advanced level, approximately the same percentage as in the West region and the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that nearly three-fourths of the public school students in Idaho can be expected to perform basic arithmetical operations, with or without a calculator. These same students are also likely to have a conceptual understanding of fundamental mathematical concepts such as place value, order of operations, and fractions. The nearly 20 percent of the students at or above the proficient level can be expected to solve more complex problems, classify geometric figures based on their properties, and show an understanding of the basic concepts of probability. The small percentage of students at the advanced level are likely to have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents. They can able be expected to use scale drawings and solve problems involving concepts of probability.
Figure 3.1-ID

Figure 3.1-ID

Percentage of Students Below Basic and Within Each Achievement Level for Idaho

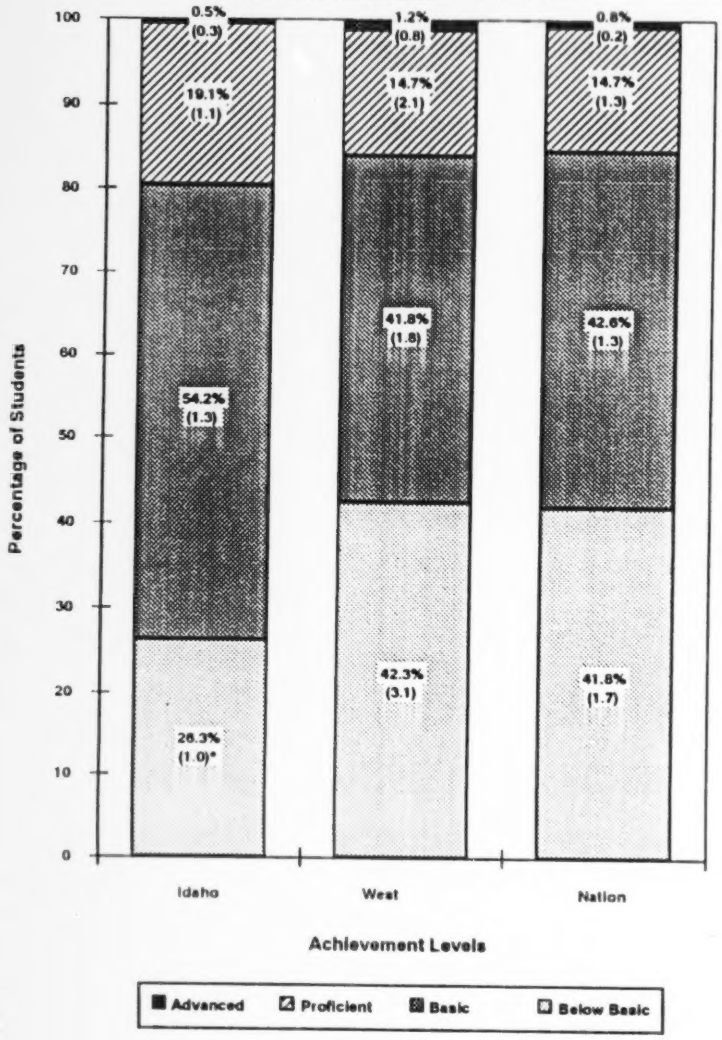
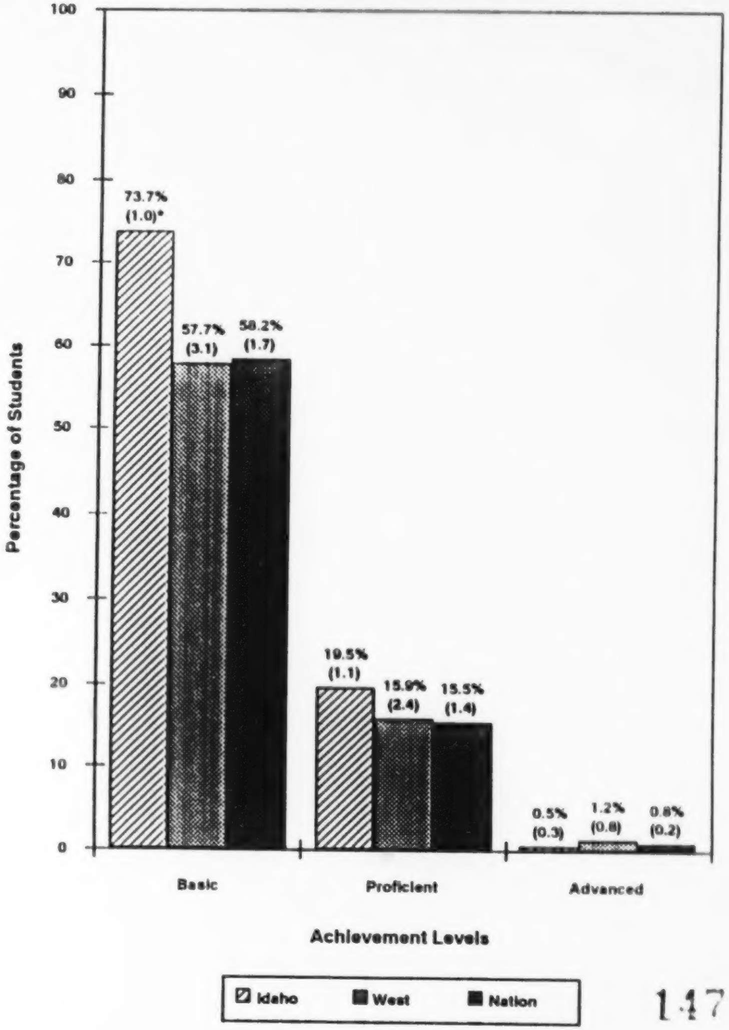


Figure 3.2-ID

Percentage of Students At or Above Grade 8 Achievement Levels for Idaho



* Standard errors are shown in parentheses

The results for Idaho have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[23] Tables 3.1-ID through 3.4-ID present these findings for Idaho and the most significant relationships are summarized below.

Male students in Idaho are more likely than female students to be at or above the proficient level (see Table 3.1-ID). There are no significant differences, however, in the percentages of males and females at or above the basic level or advanced levels. Idaho students of both genders are far more likely than their regional or national counterparts to be at or above the basic level.

Whites, Hispanics, and American Indians are the major race/ethnic groups in Idaho and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-ID). A larger percent of White students reach the basic level in Idaho than in the West region or the nation as a whole.

In Idaho, students from extreme rural communities are less likely to be at or above the proficient level than those students from "other" communities (see Table 3.3-ID). Idaho students from extreme rural and "other" communities are more likely to be performing at or above the basic and proficient levels than students from similar communities across the nation. Sample sizes limit the ability to generalize about urban communities (advantaged and disadvantaged) in Idaho.

In Idaho, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at almost every increment in the measure of parental education (see Table 3.4-ID). (The sole exception is a nonsignificant difference between students whose parents have some postsecondary education and students whose parents are college graduates). At almost every level of parental education, however, students from Idaho are more likely to reach the basic level than their national or regional counterparts.

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[23] See Appendix B for complete definitions of these subpopulations.

Table 3.1-ID

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Idaho

	GRADE 8 ACHIEVEMENT LEVEL		
GENDER	**Basic**	**Proficient**	**Advanced**
Male			
Idaho	74.6 (1.2)	22.1 (1.5)	0.6 (0.4)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Idaho	72.7 (1.5)	16.7 (1.2)	0.3 (0.3)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Idaho	73.7 (1.0)	19.5 (1.1)	0.5 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-ID

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

Idaho

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Idaho	77.0 (1.0)	21.2 (1.2)	0.5 (0.3)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Idaho	*** (***)	*** (***)	*** (***)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Idaho	42.2 (5.1)	4.2 (1.9)	0.0 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Idaho	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Idaho	47.3 (7.7)	6.0 (3.7)	0.0 (0.0)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Idaho	73.7 (1.0)	19.5 (1.1)	0.5 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-ID

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Idaho

	GRADE 8 ACHIEVEMENT LEVEL		
TYPE OF COMMUNITY	**Basic**	**Proficient**	**Advanced**
Advanced Urban			
Idaho	*** (***)	*** (***)	*** (***)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Idaho	*** (***)	*** (***)	*** (***)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Idaho	70.4 (1.9)	15.3 (1.3)	0.2 (0.2)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Idaho	74.3 (1.4)	20.6 (1.6)	0.5 (0.4)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Idaho	73.7 (1.0)	19.5 (1.1)	0.5 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-ID

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Idaho

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Idaho	44.3 (4.5)	3.9 (1.8)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Idaho	61.6 (3.2)	9.6 (1.9)	0.0 (0.0)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Idaho	80.2 (2.2)	19.2 (2.5)	0.2 (0.5)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Idaho	82.9 (1.5)	27.6 (1.8)	0.9 (0.6)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Idaho	73.7 (1.0)	19.5 (1.1)	0.5 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

Indiana

In Indiana, 34.9 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-IN). This is very similar to the percentage for the Central region (35.9 percent) and better than that for the nation as a whole (41.8 percent). Almost half (47.6 percent) of the students are performing at the basic level. Another 16.4 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 1.1 percent meet the standards for the advanced level.

Figure 3.2-IN and the tables for Indiana present the information in terms of the percentages of students "at or above" each achievement level. Almost two-thirds (65.1 percent) of Indiana's students are at or above the basic level. This is similar to the figure for the Central region and higher than that for the entire nation. Approximately one-sixth (17.5 percent) of Indiana's Grade 8 students are at or above the proficient level, a figure quite similar to the regional and national percentages (15.5 and 15.5 percent, respectively). In Grade 8, 1.1 percent of the students in Indiana reach the advanced level, approximately the same percentage as the Central region (0.7 percent) and the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that nearly two-thirds of the public school students in Indiana can be expected to perform basic arithmetical operations, with or without a calculator. These same students are also likely to have a conceptual understanding of fundamental mathematical concepts such as place value, order of operations, and fractions. The nearly 20 percent of the students at or above the proficient level can be expected to solve more complex problems, classify geometric figures based on their properties, and show an understanding of the basic concepts of probability. The small percentage of students at the advanced level are likely to have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents. They can able be expected to use scale drawings and solve problems involving concepts of probability.

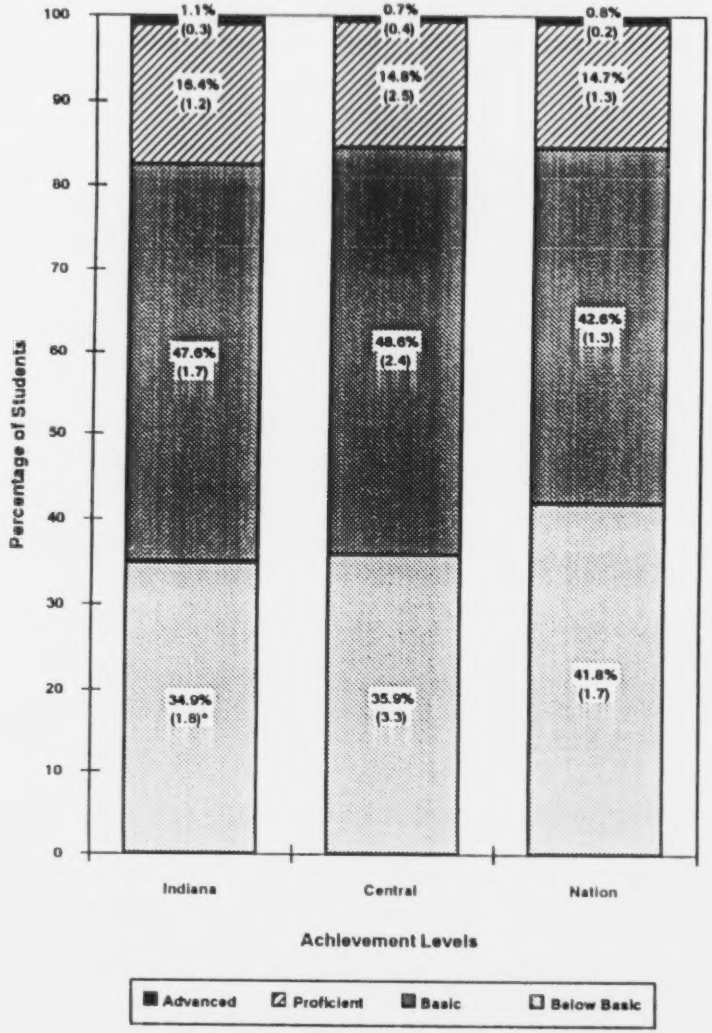

Figure 3.1-IN

Percentage of Students Below Basic and Within Each Achievement Level for Indiana

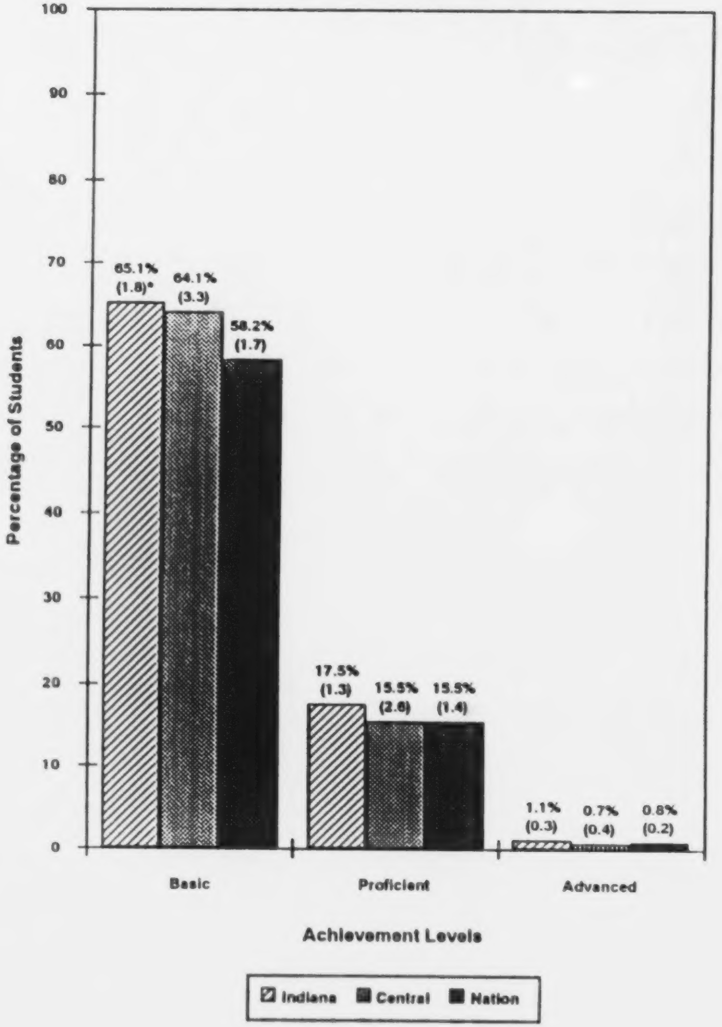

Figure 3.2-IN

Percentage of Students At or Above Grade 8 Achievement Levels for Indiana

* Standard errors are shown in parentheses

The results for Indiana have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[24] Tables 3.1-IN through 3.4-IN present these findings for Indiana and the most significant relationships are summarized below.

Male students in Indiana are more likely than female students to be at or above the proficient level (see Table 3.1-IN). There are no significant differences, however, in the percentages of males and females at or above the basic or advanced levels. Male students in Indiana are also more likely than their national counterparts to be at or above the basic level.

Whites, Blacks and Hispanics, are the major race/ethnic groups in Indiana. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-IN). In Indiana, the patterns for each of the race/ethnic groups are similar to those for the nation as a whole.

In Indiana, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than are students from other types of communities. Students from disadvantaged urban communities in Indiana are less likely to be at or above the basic and proficient levels than students from extreme rural and "other" communities (see Table 3.3-IN). Urban students from advantaged and disadvantaged communities in Indiana are not appreciably different from their regional and national counterparts. In some cases, however, students from extreme rural and "other" communities in Indiana are more likely to be performing at or above the basic and proficient levels than students from similar communities across the region and throughout the nation.

In Indiana, as in the rest of the nation, student performance is strongly related to parental education. Students in Indiana whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-IN). Students whose parents are college graduates are also more likely to be at or above the basic and proficient levels than are students whose parents have some

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[24] See Appendix B for complete definitions of these subpopulations.

Table 3.1-IN

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Indiana

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Indiana	67.6 (1.8)	19.8 (1.8)	1.7 (0.6)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Indiana	62.4 (2.4)	15.1 (1.5)	0.5 (0.2)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Indiana	65.1 (1.8)	17.5 (1.3)	1.1 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-IN

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Indiana

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Indiana	70.8 (1.7)	19.5 (1.4)	1.2 (0.3)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Indiana	27.4 (3.9)	1.6 (0.7)	0.1 (0.0)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Indiana	35.4 (5.8)	6.7 (2.1)	0.8 (1.3)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Indiana	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Indiana	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Indiana	65.1 (1.8)	17.5 (1.3)	1.1 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-IN

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Indiana

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Indiana †	80.3 (3.6)	29.9 (6.1)	4.4 (2.4)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Indiana †	33.4 (7.4)	3.1 (1.7)	0.0 (0.0)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Indiana	64.2 (4.7)	15.2 (2.3)	0.6 (0.6)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Indiana	67.2 (2.1)	17.8 (1.5)	0.8 (0.2)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Indiana	65.1 (1.8)	17.5 (1.3)	1.1 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-IN

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Indiana

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Indiana	43.2 (6.4)	5.7 (2.1)	0.1 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Indiana	56.3 (2.3)	9.3 (1.3)	0.1 (0.2)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Indiana	71.5 (2.7)	20.4 (2.1)	1.4 (0.6)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Indiana	78.4 (2.1)	27.8 (2.4)	2.2 (0.8)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Indiana	65.1 (1.8)	17.5 (1.3)	1.1 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

postsecondary education, but no college degrees. At almost every level of parental education, however, students from Indiana are about as likely to reach the basic and proficient levels as their national or regional counterparts.

Kentucky

In Kentucky, 49.4 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-KY). This is similar to the percentage for the Southeast region (53.5 percent) and higher than that for the nation as a whole (41.8 percent). Two-fifths (40.1 percent) of the students are performing at the basic level. Just over 10 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.2 percent meet the standards for the advanced level.

Figure 3.2-KY and the tables for Kentucky present the information in terms of the percentages of students "at or above" each achievement level. Just over one-half (50.6 percent) of the Grade 8 students in Kentucky are at or above the basic level. This is close to the rate for the Southeast region, but below that for the entire nation (58.2 percent). Just over 10 percent of Kentucky's Grade 8 students are at or above the proficient level. Again, this is similar to the figure for the Southeast region (11.3 percent) and below that of the nation as a whole (15.5). In Grade 8, 0.2 percent of the students in Kentucky reach the advanced level. Once again, this is similar to the percentage for the Southeast region (0.4) and below the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that only about one-half of the Grade 8 students in Kentucky can be expected to solve simple problems involving addition, subtraction, multiplication, and division. These students are also likely to be able to use basic geometric terms and identify elementary geometric figures. About one-tenth of the students (those at or above the proficient level) can be expected to translate verbal problems into simple algebraic expressions and solve problems using decimals, fractions, or proportions. A very small percentage are likely to be able to use scale drawings, metric measurement, or other more advanced mathematical concepts.

Figure 3.1-KY

Percentage of Students Below Basic and Within Each Achievement Level for Kentucky

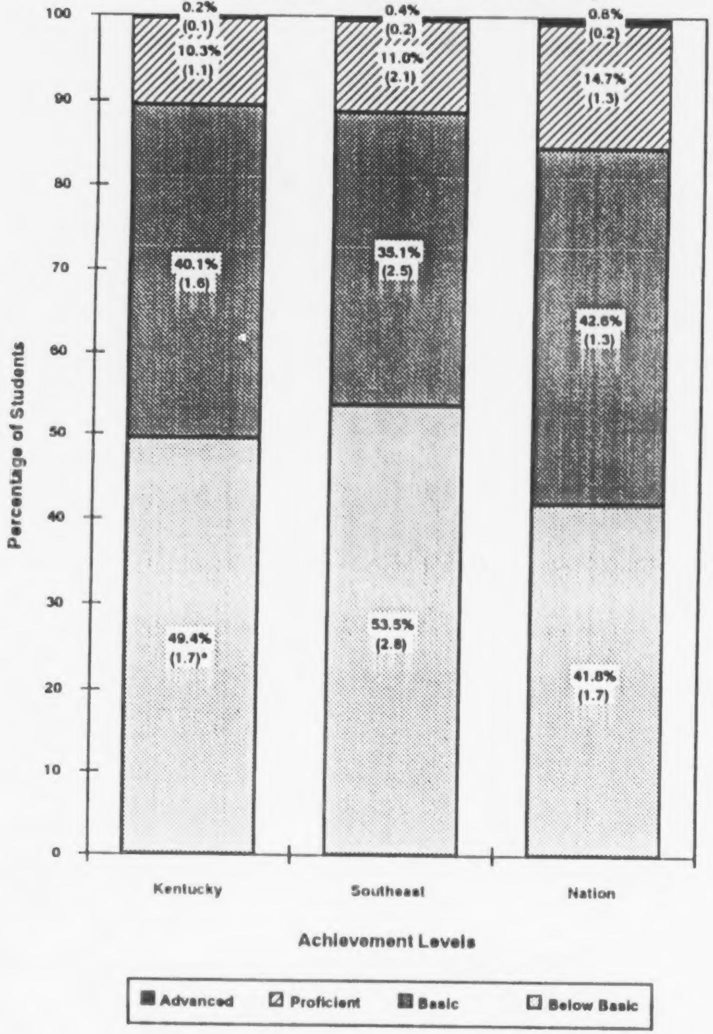
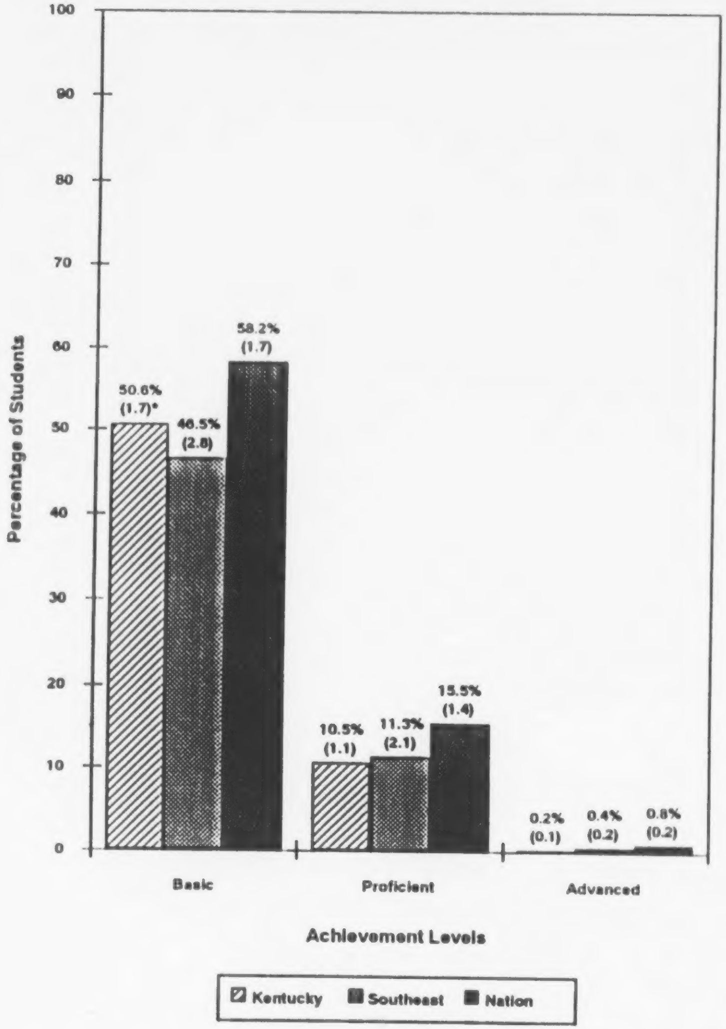


Figure 3.2-KY

Percentage of Students At or Above Grade 8 Achievement Levels for Kentucky



* Standard errors are shown in parentheses

The results for Kentucky have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[25] Tables 3.1-KY through 3.4-KY present these findings for Kentucky and the most significant relationships are summarized below.

Male students in Kentucky are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-KY). Kentucky students of both genders, however, are less likely than their national counterparts to be at or above the basic level. Male and female students in Kentucky are also less likely to be at or above the proficient level than their counterparts in the nation as a whole.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Kentucky and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-KY). A smaller percentage of White and Hispanic students reach the basic level in Kentucky than in the nation as a whole. In Kentucky, Whites have a lower percentage at or above the proficient level than they do nationally.

In Kentucky, students from advantaged urban communities are more likely to be at or above the basic level than are students from extreme rural communities (see Table 3.3-KY). Students from disadvantaged urban communities have less likely to be at or above the basic level than students from extreme rural communities in Kentucky. Advantaged urban students from Kentucky, however, are less likely than their national counterparts to be at or above the basic level.

In Kentucky, as in the rest of the nation, student performance is strongly related to parental education. Students in Kentucky whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than those students whose parents did not go beyond high school (see Table 3.4-KY). Students whose parents are high school graduates are also more likely to be at or above the basic and proficient levels than students whose parents did not finish high school. At most levels of parental education, students from Kentucky are as likely to reach

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[25] See Appendix B for complete definitions of these subpopulations.

Table 3.1-KY

Percentage of Students At or Above Achievement Levels By Gender 1990 NAEP Mathematics Assessment

Kentucky

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Kentucky	51.3 (2.0)	12.0 (1.3)	0.5 (0.2)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Kentucky	49.9 (1.9)	9.0 (1.3)	0.0 (0.0)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Kentucky	50.6 (1.7)	10.5 (1.1)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-KY

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Kentucky

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Kentucky	55.0 (1.7)	11.9 (1.2)	0.2 (0.1)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Kentucky	27.0 (3.2)	2.1 (1.1)	0.0 (0.0)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Kentucky	15.2 (4.5)	0.0 (0.0)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Kentucky	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Kentucky	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Kentucky	50.6 (1.7)	10.5 (1.1)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-KY

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Kentucky

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Kentucky †	62.6 (5.2)	20.2 (3.1)	0.7 (0.8)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Kentucky †	36.5 (3.7)	6.6 (2.7)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Kentucky	47.0 (2.7)	7.0 (1.1)	0.0 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Kentucky	53.5 (2.2)	12.0 (1.5)	0.4 (0.2)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Kentucky	50.6 (1.7)	10.5 (1.1)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-KY

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Kentucky

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Kentucky	28.4 (2.9)	1.7 (1.0)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Kentucky	44.5 (2.7)	5.9 (1.1)	0.0 (0.0)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Kentucky	68.7 (2.8)	18.1 (2.3)	0.2 (0.3)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Kentucky	66.8 (2.6)	18.5 (2.1)	0.7 (0.5)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Kentucky	50.6 (1.7)	10.5 (1.1)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

the basic and proficient levels as their national or regional counterparts. Kentucky students who are children of college graduates, however, are less likely than their counterparts across the nation to be at or above the basic and proficient levels.

Louisiana

In Louisiana, 63.3 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-LA). This is substantially above the percentage for the Southeast region (53.5 percent) and for the nation as a whole (41.8 percent). Almost one-third (31.4 percent) of the students are performing at the basic level. Just over 5 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.2 percent meet the standards for the advanced level.

Figure 3.2-LA and the tables for Louisiana present the information in terms of the percentages of students "at or above" each achievement level. In Louisiana, 36.7 percent of the Grade 8 students are at or above the basic level. This is below the comparable percentages for the Southeast region (46.5 percent) and the nation as a whole (58.2). Approximately 5 percent of Louisiana's Grade 8 students are performing at or above the proficient level. Again, this is below the regional and national percentages (11.3 and 15.5 percent, respectively). In Grade 8, 0.2 percent of the students in Louisiana reach the advanced level, a rate similar to that for the Southeast region but lower than that for the entire nation.

These percentages at or above the basic, proficient, and advanced levels mean that about one-third of the students in Louisiana are likely to be able to use the four basic arithmetic operations for problem solving, or use rulers to calculate perimeters and areas of rectangular figures. Just over 5 percent of the students can be expected to solve problems using decimals or fractions. Less than 1 percent of the students have a conceptual understanding of geometry, measurement, or probability.

Figure 2.1-LA

Percentage of Students Below Basic and Within Each Achievement Level For Louisiana

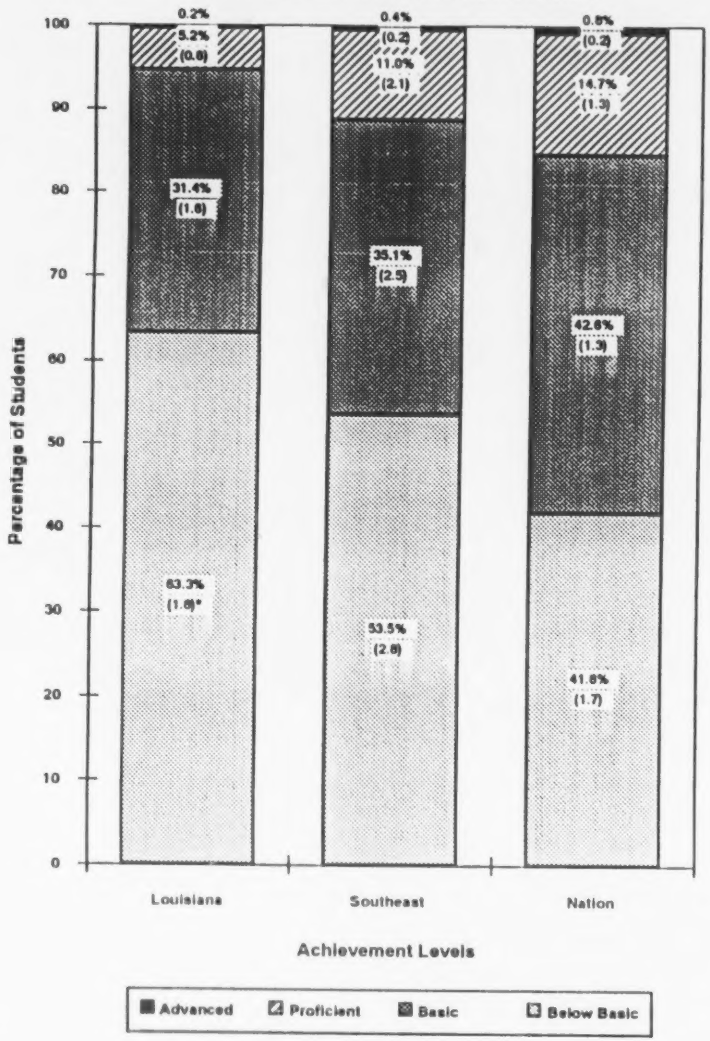
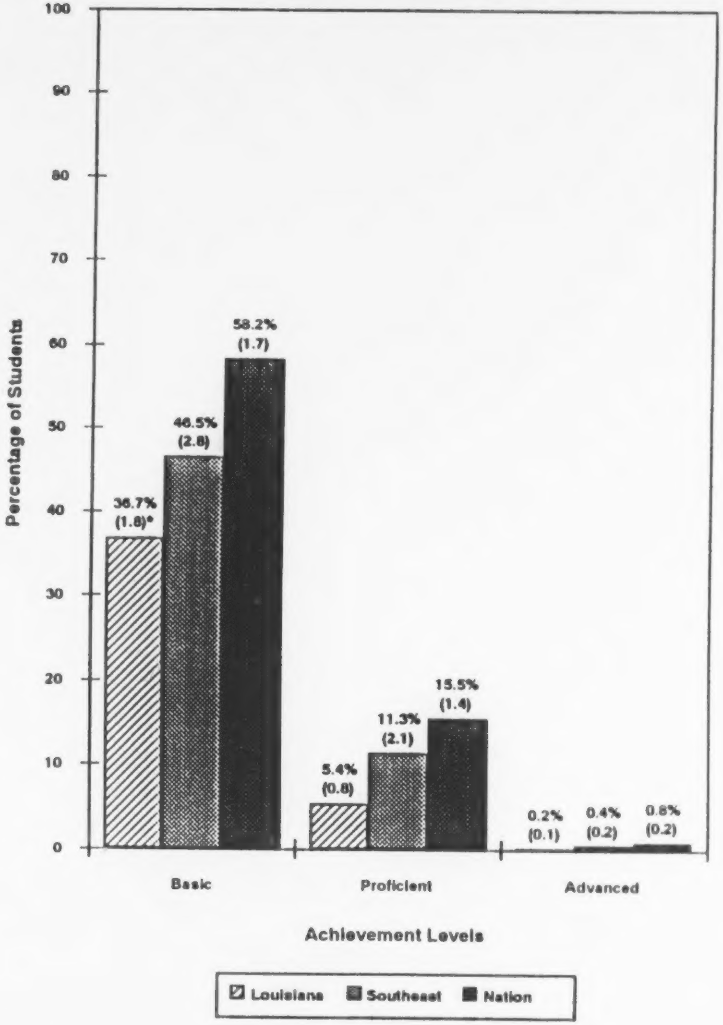


Figure 2.2-LA

Percentage of Students At or Above Grade 8 Achievement Levels For Louisiana



* Standard errors are shown in parentheses

The results for Louisiana have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[26] Tables 3.1-LA through 3.4-LA present these findings for Louisiana and the most significant relationships are summarized below.

Male students in Louisiana are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-LA). Louisiana students of both genders are less likely to be at or above the basic and proficient levels than their national counterparts. Females in Louisiana are also less likely to be at or above the basic and proficient levels than females in the Southeast region. Males in Louisiana are below males in the Southeast region only at the proficient level.

Whites, Blacks and Hispanics are the major race/ethnic groups in Louisiana and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-LA). In Louisiana, a smaller percentage of Whites, Blacks, and Hispanics are at or above the basic level than in the nation as a whole. Whites and Blacks also have a smaller percentage at or above the proficient level in Louisiana than they do nationally.

In Louisiana, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than those students from other types of communities (see Table 3.3-LA). Students from disadvantaged urban communities and extreme rural communities in Louisiana have the lowest percentages at or above the basic level. In each type of community, students in Louisiana are less likely to be performing at or above the basic and proficient levels than students from similar communities throughout the nation.

In Louisiana, as in the rest of the nation, student performance is strongly related to parental education. Students in Louisiana whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school. Students whose parents graduated from high school are also more likely to be at or above the

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[26] See Appendix B for complete definitions of these subpopulations.

Table 3.1-LA

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Louisiana

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Louisiana	37.7 (2.0)	6.0 (1.0)	0.3 (0.2)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Louisiana	35.8 (2.1)	4.8 (1.0)	0.1 (0.1)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Louisiana	36.7 (1.8)	5.4 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-LA

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Louisiana

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Louisiana	53.3 (2.4)	8.7 (1.4)	0.3 (0.2)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Louisiana	14.5 (1.7)	0.7 (0.4)	0.0 (0.0)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Louisiana	15.5 (4.5)	1.9 (1.1)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Louisiana	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Louisiana	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Louisiana	36.7 (1.8)	5.4 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-LA

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Louisiana

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Louisiana †	66.3 (4.5)	18.0 (3.8)	1.8 (0.9)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Louisiana	23.8 (5.2)	3.0 (1.2)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Louisiana †	24.2 (3.4)	1.2 (0.7)	0.0 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Louisiana	40.8 (2.9)	5.6 (1.1)	0.1 (0.1)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Louisiana	36.7 (1.8)	5.4 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-LA

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Louisiana

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Louisiana	21.5 (2.5)	1.8 (0.8)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Louisiana	29.6 (2.5)	2.0 (0.6)	0.0 (0.0)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Louisiana	48.2 (2.7)	7.7 (1.6)	0.1 (0.2)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Louisiana	48.1 (3.0)	10.2 (1.7)	0.6 (0.4)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Louisiana	36.7 (1.8)	5.4 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

basic level than students whose parents did not (see Table 3.4-LA). At almost every level of parental education, however, students from Louisiana are less likely to reach the basic and proficient levels than their national counterparts. In Louisiana, children of college graduates are also less likely to reach the basic and proficient levels than their counterparts in the Southeast region.

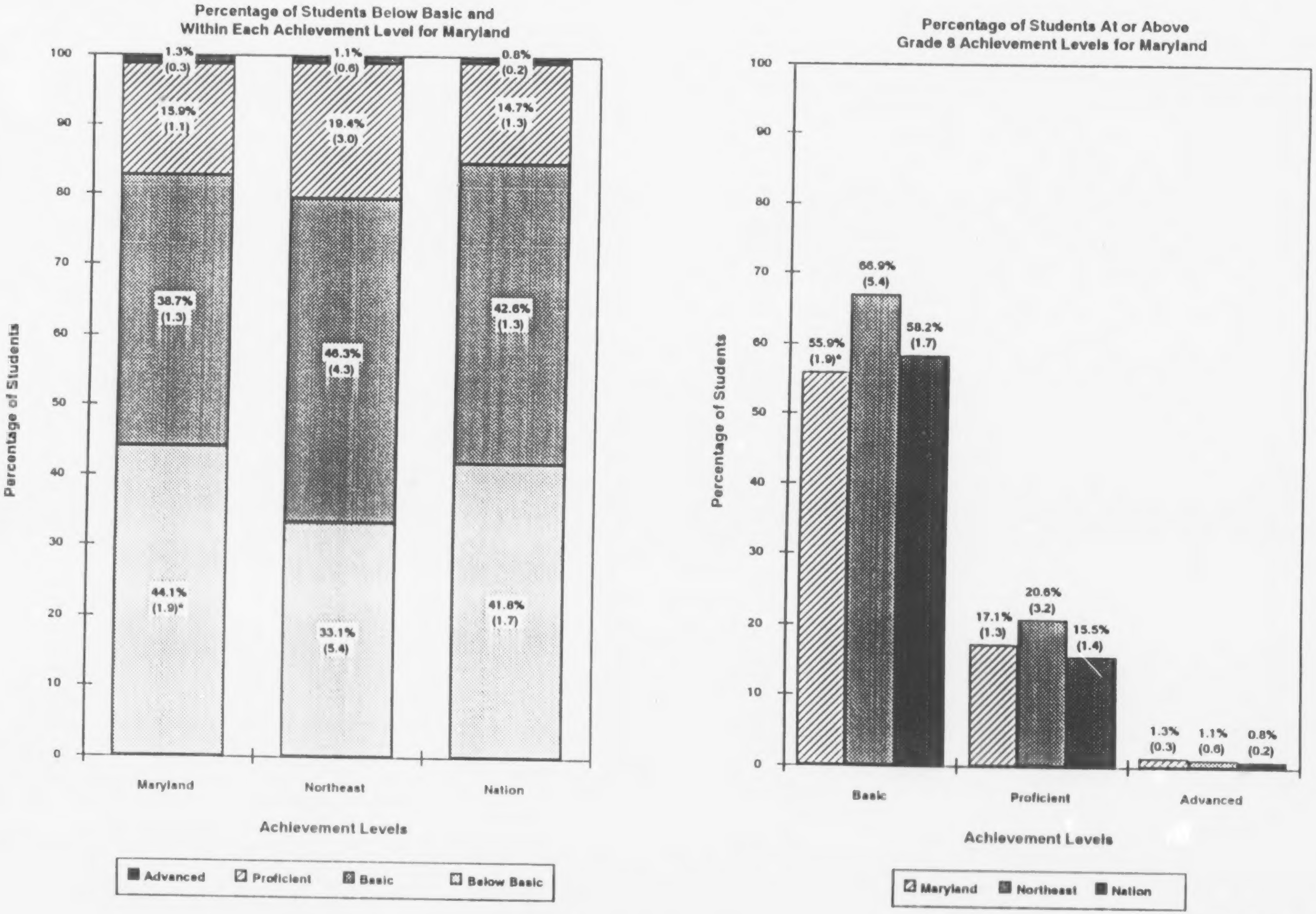
Maryland

In Maryland, 44.1 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-MD). This is not significantly greater than the percentage for the Northeast region (33.1 percent) and very close to the rate for the nation as a whole (41.8 percent). Nearly two-fifths (38.7 percent) of the Maryland students are performing at the basic level. Another 15.9 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 1.3 percent meet the standards set for the advanced level.

Figure 3.2-MD and the tables for Maryland present the information in terms of the percentages of students "at or above" each achievement level. Over one-half (55.9 percent) of Maryland's students are at or above the basic level. Approximately one-sixth (17.1 percent) of Maryland's Grade 8 students are at or above the proficient level. In both cases, these percentages are similar to those for the Northeast region and the nation as a whole. In Grade 8, 1.3 percent of the students in Maryland reach the advanced level, approximately the same as the percentage for the Northeast region and not significantly above the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that about one-half of the students in Maryland are likely to be able to know when and how to use a calculator, and are able to estimate to arrive at an answer. Over 17 percent of the students (those at or above the proficient level) can be expected to compute with integers and are likely to show an understanding of the basic concepts of probability. The advanced students in this state are likely to be able to solve problems involving concepts of probability and to be able to interpret line graphs.

Figure 3.1-MD



Percentage of Students Below Basic and Within Each Achievement Level for Maryland

Percentage of Students At or Above Grade 8 Achievement Levels for Maryland

* Standard errors are shown in parentheses

The results for Maryland have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[27] Tables 3.1-MD through 3.4-MD present these findings for Maryland and the most significant relationships are summarized below.

Male students in Maryland are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-MD). Female students in Maryland, however, are less likely than their counterparts in the Northeast to be at or above the basic level.

Whites, Blacks, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in Maryland. The percentage of Asian/Pacific Island students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-MD). The percentage of White students at or above these two levels is lower than that of the Asian/Pacific Islanders, but higher than that of the other ethnic groups. There are no statistically significant differences at the advanced level. In almost every case, each race/ethnic group in Maryland performs similarly to its counterpart in the Northeast region and the nation as a whole.

In Maryland, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than these students from other types of communities (see Table 3.3-MD). Students from disadvantaged urban communities have the lowest percentages at or above the basic and advanced levels. In most cases, students from each type of community in Maryland are not appreciably different from their regional and national counterparts.

In Maryland, as in the rest of the nation, student performance is strongly related to parental education. Students in Maryland whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than those students whose parents did not go beyond high school (see Table 3.4-MD). Students whose parents are college graduates are also more likely to be

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[27] See Appendix B for complete definitions of these subpopulations.

Table 3.1-MD

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Maryland

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Maryland	55.7 (2.0)	17.3 (1.4)	1.7 (0.5)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Maryland	56.1 (2.2)	17.0 (1.5)	0.8 (0.3)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Maryland	55.9 (1.9)	17.1 (1.3)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-MD

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

Maryland

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Maryland	71.5 (2.0)	23.6 (1.7)	1.8 (0.5)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Maryland	26.9 (2.7)	3.1 (0.9)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Maryland	29.4 (3.5)	4.6 (1.4)	0.3 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Maryland	86.8 (4.3)	50.3 (6.4)	4.9 (3.2)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Maryland	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Maryland	55.9 (1.9)	17.1 (1.3)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-MD

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Maryland

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Maryland	72.4 (4.6)	31.9 (3.2)	4.1 (1.2)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Maryland	22.9 (5.0)	3.1 (1.4)	0.0 (0.0)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Maryland †	49.2 (4.3)	8.9 (5.2)	0.2 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Maryland	57.5 (3.2)	16.0 (1.9)	0.6 (0.4)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Maryland	55.9 (1.9)	17.1 (1.3)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-MD

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Maryland

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Maryland	33.9 (3.8)	5.0 (1.9)	0.2 (0.7)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Maryland	39.4 (2.4)	5.8 (1.1)	0.1 (0.2)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Maryland	61.0 (3.1)	13.3 (1.8)	0.4 (0.5)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Maryland	70.0 (1.9)	29.4 (2.0)	2.7 (0.7)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Maryland	55.9 (1.9)	17.1 (1.3)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

at or above the basic, proficient, and advanced levels than those students whose parents have some postsecondary education, but no college degrees.

Michigan

In Michigan, 39.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-MI). This is approximately the same as the percentage for the Central region (35.9 percent) and for the nation as a whole (41.8 percent). Over two-fifths (44.2 percent) of the students are performing at the basic level. Another 16.0 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.8 percent meet the standards set for the advanced level.

Figure 3.2-MI and the tables for Michigan present the information in terms of the percentages of students "at or above" each achievement level. Approximately three-fifths (61.0 percent) of Michigan's students are at or above the basic level. Just over one-sixth (16.8 percent) of Michigan's Grade 8 students are at or above the proficient level while 0.8 percent reach the advanced level. In all three cases, the percentages for Michigan students are very similar to those for students in the Central region and the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that about three-fifths of the Grade 8 students in Michigan are likely to be able to solve problems using the four basic arithmetic operations. About one-sixth of the students in this state have a conceptual understanding of measurement and geometric principles. The students at the advanced level (less than 1 percent of the total) can solve complex problems involving elementary concepts of probability and can apply basic geometric properties related to triangles and perpendicular and parallel lines.

Figure 3.1-MI

Percentage of Students Below Basic and Within Each Achievement Level for Michigan

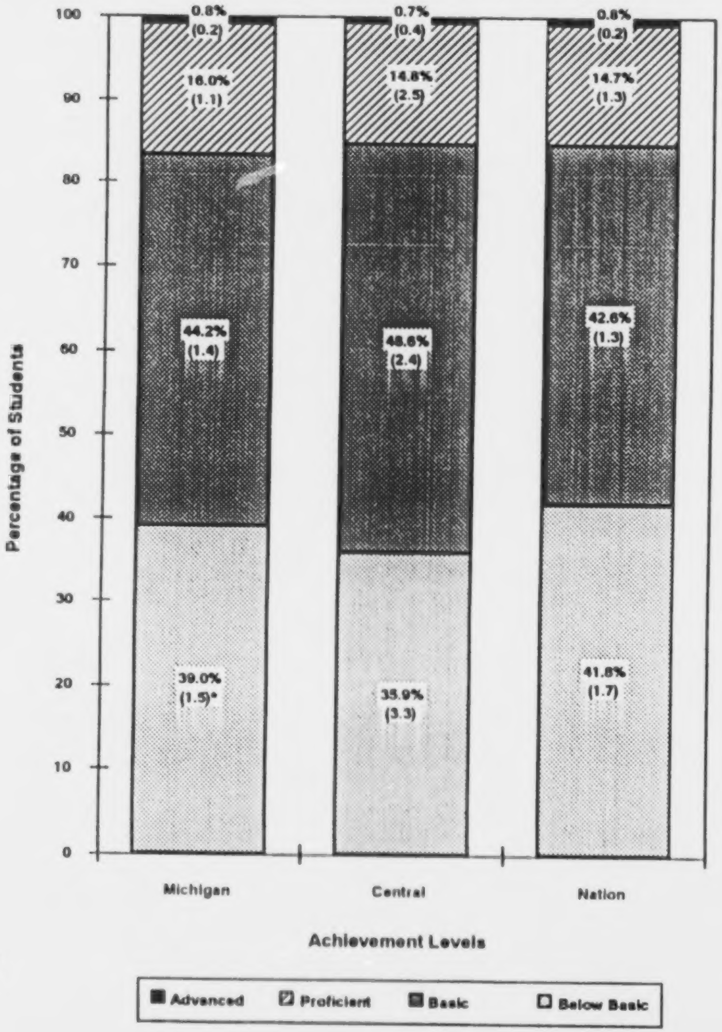
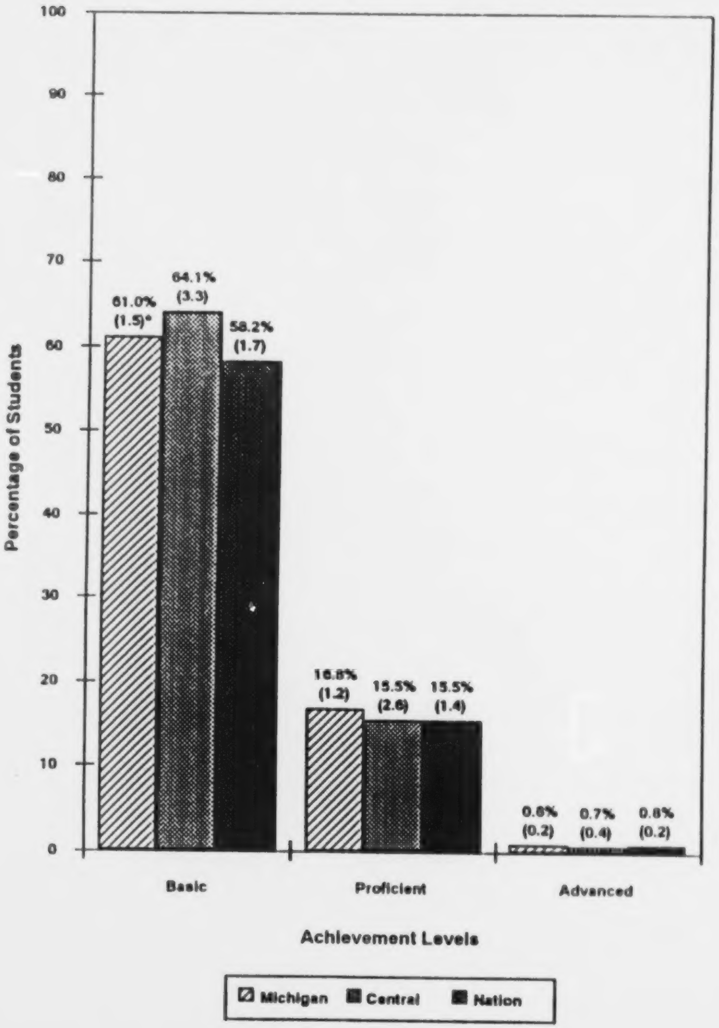


Figure 3.2-MI

Percentage of Students At or Above Grade 8 Achievement Levels for Michigan



* Standard errors are shown in parentheses

The results for Michigan have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[28] Tables 3.1-MI through 3.4-MI present these findings for Michigan and the most significant relationships are summarized below.

Male students in Michigan are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-MI). Michigan students of either gender are about as likely as their regional or national counterparts to be at or above the basic, proficient, and advanced levels.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Michigan. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-MI). The percentage of Hispanic students at or above the basic and proficient levels in Michigan is greater than that for Black students. There are no differences at or above the advanced level. Results for White and Hispanic students in Michigan are similar to those for their regional and national counterparts. Black students in Michigan, however, are less likely to be at or above the basic and proficient levels than their counterparts in the nation as a whole.

In Michigan, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than all other types of communities (see Table 3.3-MI). Students from advantaged urban communities are also more likely to be at or above the advanced level than students from every type of community except extreme rural. Michigan students from disadvantaged urban communities have the lowest percentages at or above the basic and proficient levels.

In Michigan, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at almost every increment in the measure of parental education (see Table 3.4-MI). (The difference in the percentages at or above basic is not statistically significant for those students whose parents have some education after high school and those whose

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[28] See Appendix B for complete definitions of these subpopulations.

Table 3.1-MI

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Michigan

	GRADE 8 ACHIEVEMENT LEVEL		
GENDER	**Basic**	**Proficient**	**Advanced**
Male			
Michigan	61.8 (1.8)	18.0 (1.5)	0.8 (0.3)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Michigan	60.0 (1.9)	15.4 (1.4)	0.8 (0.3)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Michigan	61.0 (1.5)	16.8 (1.2)	0.8 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-MI

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

Michigan

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Michigan	70.8 (1.5)	20.3 (1.4)	0.9 (0.3)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Michigan	14.5 (2.4)	0.3 (0.3)	0.0 (0.0)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Michigan	33.8 (5.4)	3.9 (1.6)	0.1 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Michigan	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Michigan	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Michigan	61.0 (1.5)	16.8 (1.2)	0.8 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-MI

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Michigan

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Michigan †	83.0 (2.6)	32.6 (3.7)	2.6 (1.0)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Michigan †	22.1 (5.5)	1.6 (1.8)	0.0 (0.0)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Michigan	66.1 (3.2)	16.5 (3.1)	0.5 (0.7)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Michigan	65.9 (2.6)	17.0 (1.5)	0.5 (0.2)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Michigan	61.0 (1.5)	16.8 (1.2)	0.8 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-MI

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Michigan

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Michigan	36.7 (4.6)	2.8 (2.0)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Michigan	50.5 (2.7)	7.7 (1.3)	0.1 (0.0)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Michigan	69.0 (2.7)	18.0 (2.2)	0.7 (0.5)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Michigan	72.4 (1.7)	26.7 (2.0)	1.7 (0.5)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Michigan	61.0 (1.5)	16.8 (1.2)	0.8 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

parents are college graduates.) At almost every level of parental education, students from Michigan are as likely to reach the basic and proficient levels as their national or regional counterparts.

Minnesota

In Minnesota, 23.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-MN). This is substantially better than the percentage for the Central region (35.9 percent) and for the nation as a whole (41.8 percent). Just over one-half (51.6 percent) of the students in Minnesota are performing at the basic level and 23.8 percent of the students in this state are able to satisfy the requirements set for the proficient level. Almost 2 percent meet the standards set for the advanced level.

Figure 3.2-MN and the tables for Minnesota present the information in terms of the percentages of students "at or above" each achievement level. Seventy-seven percent of Minnesota's students are at or above the basic level. Over one-fourth (25.4 percent) of Minnesota's Grade 8 students are at or above the proficient level. In both cases, this is higher than the regional and national percentages. In Grade 8, 1.6 percent of the students in Minnesota reach the advanced level, significantly above the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that over three-fourths of the Grade 8 public school students in Minnesota are likely to be able to interpret bar graphs, make conversions between units of measurement, and identify elementary geometric figures. The students at or above the proficient level can be expected to solve problems requiring decimals, fractions, and proportions, along with the translation of verbal problem situations into simple algebraic expressions. The nearly 2 percent of the students at the advanced level are likely to be able to solve problems involving elementary concepts of probability.

Figure 3.1-MN

Percentage of Students Below Basic and Within Each Achievement Level for Minnesota

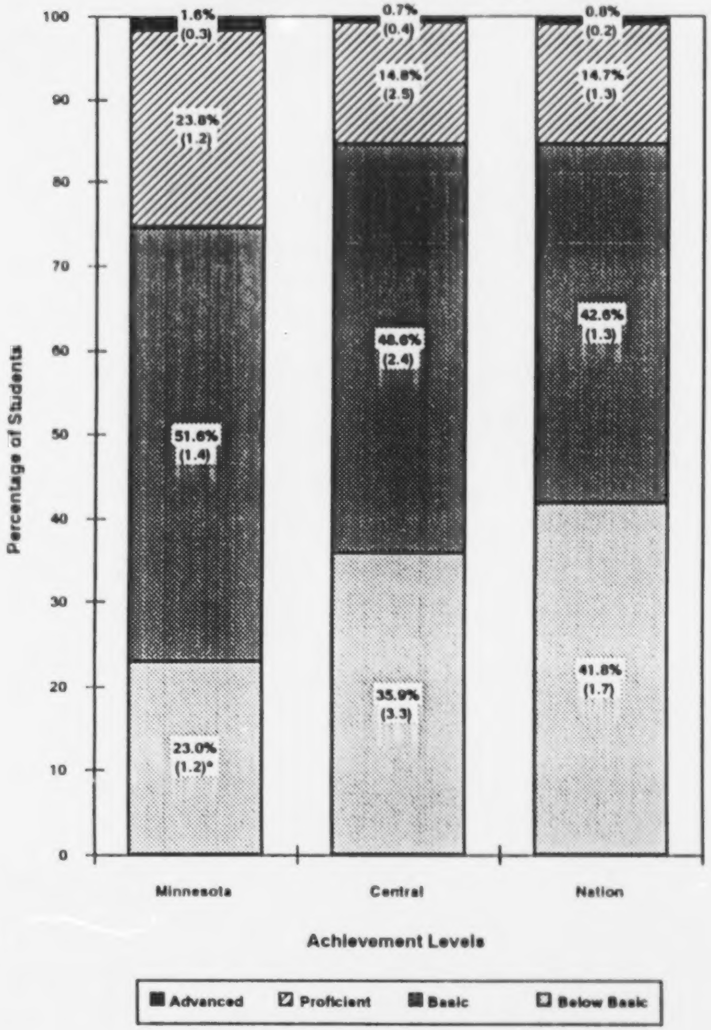
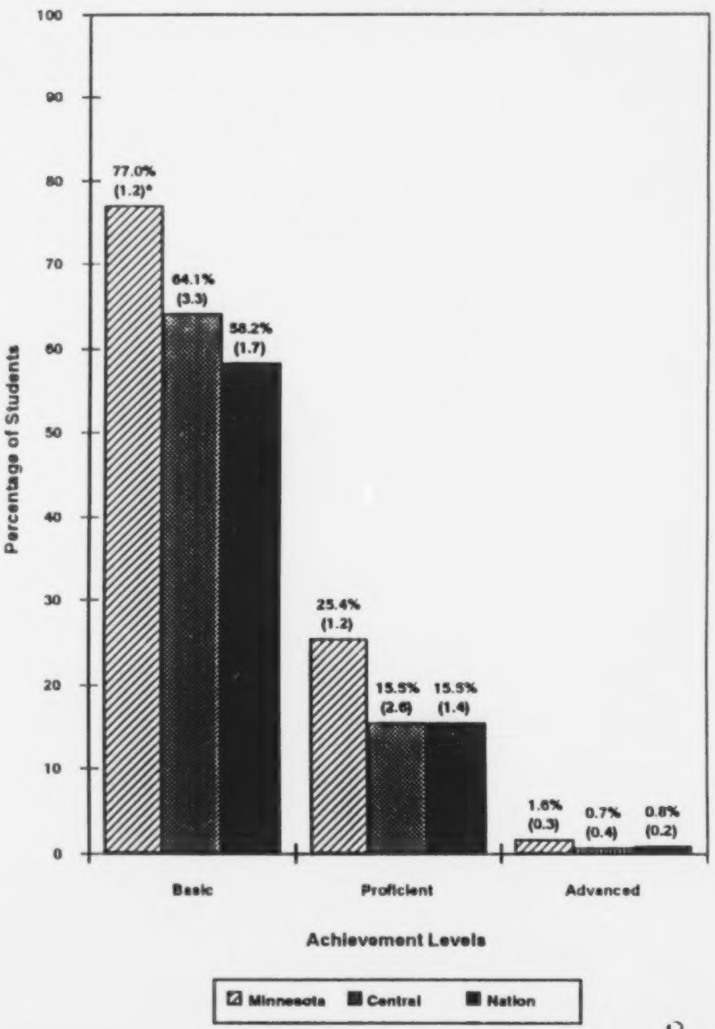


Figure 3.2-MN

Percentage of Students At or Above Grade 8 Achievement Levels for Minnesota



* Standard errors are shown in parentheses

The results for Minnesota have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[29] Tables 3.1-MN through 3.4-MN present these findings for Minnesota and the most significant relationships are summarized below.

Male students in Minnesota are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-MN). Minnesota students of both genders, however, are more likely than their regional or national counterparts to be at or above the basic level. Minnesota females are also more likely than their regional and national counterparts to be at or above the proficient level. Minnesota males are significantly above the national (but not regional) percentages for performance at or above the proficient level.

Whites, Blacks, Hispanics, and Asian Pacific Islanders are the major race/ethnic groups in Minnesota. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-MN). The Asian/Pacific Island students are less likely than Whites to be at or above the basic and proficient levels, but more likely than the other race/ethnic groups to be at or above these levels. A larger percentage of White students reach the basic and proficient levels in Minnesota than in the Central region or the nation as a whole. In Minnesota, however, the percentage of Asian/Pacific Island students at or above the proficient level is lower than in the nation as a whole. The results for the other major race/ethnic groups (Blacks and Hispanics) are similar to regional and national figures.

Minnesota is one of the few states without any significant differences in student performance across types of communities (see Table 3.3-MN). (There are too few cases from disadvantaged urban communities to include these data in the analysis.) Minnesota students from extreme rural communities and "other" communities are much more likely to be at or above the basic and proficient levels than their regional and national counterparts.

In Minnesota, as in the rest of the nation, student performance is strongly related to parental education. Students in Minnesota whose parents have some schooling beyond high

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[29] See Appendix B for complete definitions of these subpopulations.

Table 3.1-MN

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Minnesota

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Minnesota	76.3 (1.5)	27.0 (1.4)	2.2 (0.5)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Minnesota	77.7 (1.6)	23.8 (1.7)	1.1 (0.3)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Minnesota	77.0 (1.2)	25.4 (1.2)	1.6 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-MN

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

Minnesota

	GRADE 8 ACHIEVEMENT LEVEL		
RACE/ETHNICITY	**Basic**	**Proficient**	**Advanced**
White			
Minnesota	80.4 (1.1)	27.2 (1.4)	1.7 (0.3)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Minnesota †	29.4 (6.9)	5.9 (2.9)	0.3 (1.8)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Minnesota	31.0 (5.3)	3.3 (2.5)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Minnesota	66.6 (0.0)	17.6 (0.0)	2.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Minnesota	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Minnesota	77.0 (1.2)	25.4 (1.2)	1.6 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-MN

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Minnesota

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Minnesota	77.6 (1.9)	26.6 (2.5)	1.9 (0.7)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Minnesota	*** (***)	*** (***)	*** (***)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Minnesota	79.3 (1.9)	23.4 (2.4)	1.2 (0.6)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Minnesota	80.5 (1.9)	28.1 (1.8)	1.7 (0.6)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Minnesota	77.0 (1.2)	25.4 (1.2)	1.6 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-MN

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Minnesota

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Minnesota	50.6 (6.5)	7.2 (3.6)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Minnesota	65.3 (2.4)	11.4 (1.7)	0.2 (0.3)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Minnesota	87.6 (1.6)	30.9 (2.2)	1.6 (0.6)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Minnesota	85.3 (1.6)	35.8 (1.8)	3.0 (0.7)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Minnesota	77.0 (1.2)	25.4 (1.2)	1.6 (0.3)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

school (college degrees or some education after high school) are more likely to be at or above the basic, proficient, and advanced levels than are students whose parents did not go beyond high school (see Table 3.4-MN). Students whose parents completed high school are also more likely to be at or above the basic level than those students whose parents did not complete high school. At the two highest levels of parental education (some education after high school and graduated college) students from Minnesota are more likely to reach the basic and proficient levels than their national or regional counterparts. Minnesota students whose parents did not have any formal education beyond high school are also more likely to be at or above the basic level than their counterparts in the nation as a whole.

Nebraska

In Nebraska, 23.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-NE). This is substantially better than the percentage for the Central region (35.9 percent) and for the nation as a whole (41.8 percent). Just over half (50.4 percent) of the Nebraska students are performing at the basic level. Nearly one-fourth (24.9 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 1.7 percent meet the standards set for the advanced level.

Figure 3.2-NE and the tables for Nebraska present the information in terms of the percentages of students "at or above" each achievement level. Seventy-seven percent of Nebraska's students are at or above the basic level. Over one-fourth (26.6 percent) of Nebraska's Grade 8 students are at or above the proficient level. In both cases this is higher than the regional and national percentages. In Grade 8, 1.7 percent of the students in Nebraska reach the advanced level, significantly above the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that over three-fourths of the Grade 8 public school students in Nebraska are likely to be able to interpret bar graphs, make conversions between units of measurement, and identify elementary geometric figures. The students at or above the proficient level can be expected to solve problems requiring decimals, fractions, and proportions, along with the translation of verbal problem situations into simple algebraic expressions. The nearly 2 percent of the students at the advanced level are likely to be able to solve problems involving elementary concepts of probability.

Figure 3.1-NE

Percentage of Students Below Basic and Within Each Achievement Level for Nebraska

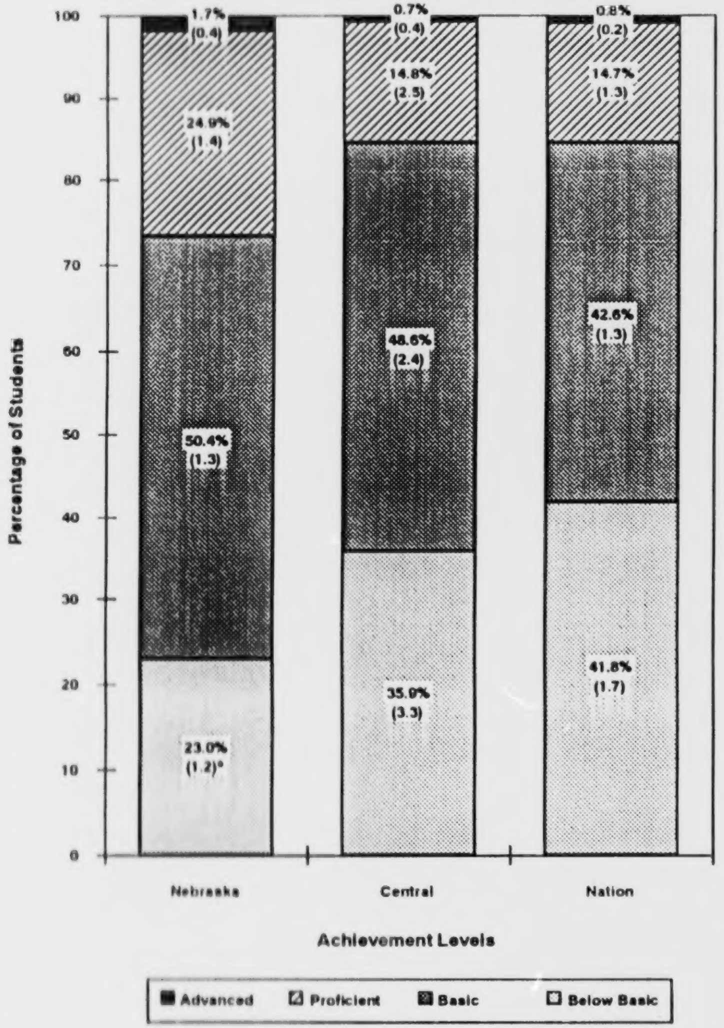
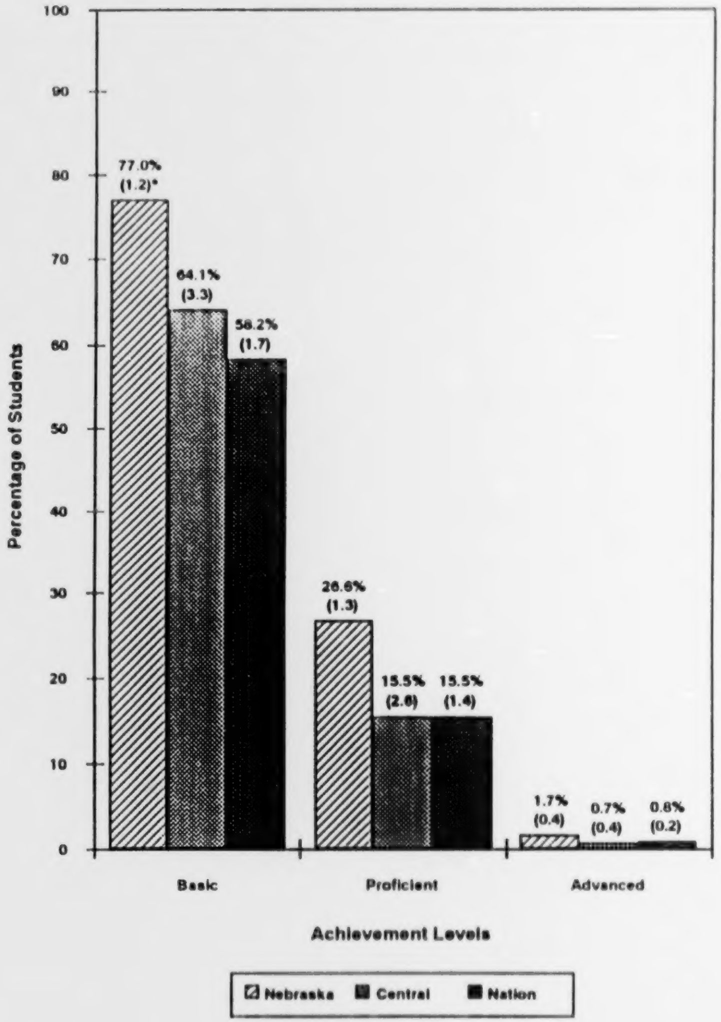


Figure 3.2-NE

Percentage of Students At or Above Grade 8 Achievement Levels for Nebraska



* Standard errors are shown in parentheses

The results for Nebraska have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[30] Tables 3.1-NE through 3.4-NE present these findings for Nebraska and the most significant relationships are summarized below.

Male students in Nebraska are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-NE). Nebraska students of both genders, however, are more likely than their regional or national counterparts to be at or above the basic level. Nebraska females are also more likely than their regional and national counterparts to be at or above the proficient level. Nebraska males are significantly above the national (but not regional) percentages for performance at or above the proficient level.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Nebraska. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-NE). The percentage of Hispanics at or above the basic level is also greater than the percentage of Blacks. A larger percent of White students are at or above the basic and proficient levels in Nebraska than in the Central region or the nation as a whole. Results for other race/ethnic groups in Nebraska are similar to those for their regional and national counterparts.

In Nebraska, students from advantaged urban communities and extreme rural communities are more likely to be at or above the basic level than are students from "other" communities (see Table 3.3-NE). The differences between the advantaged urban and extreme rural students are not statistically significant. Students from extreme rural communities in Nebraska, however, are far more likely to be performing at or above the basic and proficient levels than students from similar communities throughout the nation.

In Nebraska, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient levels for nearly every increment in the measure of parental education (see Table 3.4-NE). The single exception is a nonsignificant difference in the percentage at or

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[30] See Appendix B for complete definitions of these subpopulations.

Table 3.1-NE

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Nebraska

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Nebraska	77.7 (1.5)	28.0 (1.7)	2.3 (0.6)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Nebraska	76.4 (1.4)	25.1 (1.8)	1.2 (0.4)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Nebraska	77.0 (1.2)	26.6 (1.3)	1.7 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-NE

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Nebraska

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Nebraska	81.9 (1.2)	29.4 (1.5)	1.8 (0.4)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Nebraska	24.2 (6.2)	2.0 (1.8)	0.0 (0.0)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Nebraska	46.8 (7.8)	5.3 (2.6)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Nebraska	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Nebraska	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Nebraska	77.0 (1.2)	26.6 (1.3)	1.7 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-NE

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Nebraska

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Advantaged Urban			
Nebraska	86.3 (4.5)	37.6 (5.5)	1.8 (1.5)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Nebraska	*** (***)	*** (***)	*** (***)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Nebraska	82.2 (2.2)	27.8 (3.1)	1.0 (0.7)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Nebraska	71.8 (1.5)	22.7 (1.8)	1.5 (0.5)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Nebraska	77.0 (1.2)	26.6 (1.3)	1.7 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-NE

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Nebraska

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Nebraska	50.1 (7.5)	5.3 (2.4)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Nebraska	67.4 (2.8)	15.3 (2.0)	0.7 (0.4)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Nebraska	82.4 (2.1)	24.6 (2.4)	1.3 (0.7)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Nebraska	86.4 (1.2)	39.0 (2.0)	3.0 (0.7)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Nebraska	77.0 (1.2)	26.6 (1.3)	1.7 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

above basic between those students whose parents had some education after high school and those whose parents are college graduates. At almost every level of parental education, however, students from Nebraska are more likely to reach the basic and proficient levels than their national counterparts.

New Hampshire

In New Hampshire, 26.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-NH). This is similar to the percentage for the Northeast region (33.1 percent), but significantly better than that for the nation as a whole (41.8 percent). Over one-half (51.5 percent) of the New Hampshire students are performing at the basic level. Just over one-fifth (21.2 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 1.3 percent meet the standards set for the advanced level.

Figure 3.2-NH and the tables for New Hampshire present the information in terms of the percentages of students "at or above" each achievement level. Seventy-four percent of New Hampshire's students are at or above the basic level. Over one-fifth (22.5 percent) of New Hampshire's Grade 8 students are at or above the proficient level. In both cases, this is similar to the rate for the Northeast region, but above that for the nation as a whole. In Grade 8, 1.3 percent of the students in New Hampshire reach the advanced level, approximately the same as the percentage for the Northeast region and not significantly above the percentage for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that nearly three-fourths of the Grade 8 public school students in New Hampshire are likely to be able to interpret bar graphs, make conversions between units of measurement, and identify elementary geometric figures. The students at or above the proficient level can be expected to solve problems requiring decimals, fractions, and proportions, along with the translation of verbal problem situations into simple algebraic expressions. The 1.3 percent of the students at the advanced level are likely to be able to solve problems involving elementary concepts of probability.

Figure 3.2-NH

Percentage of Students Below Basic and Within Each Achievement Level for New Hampshire

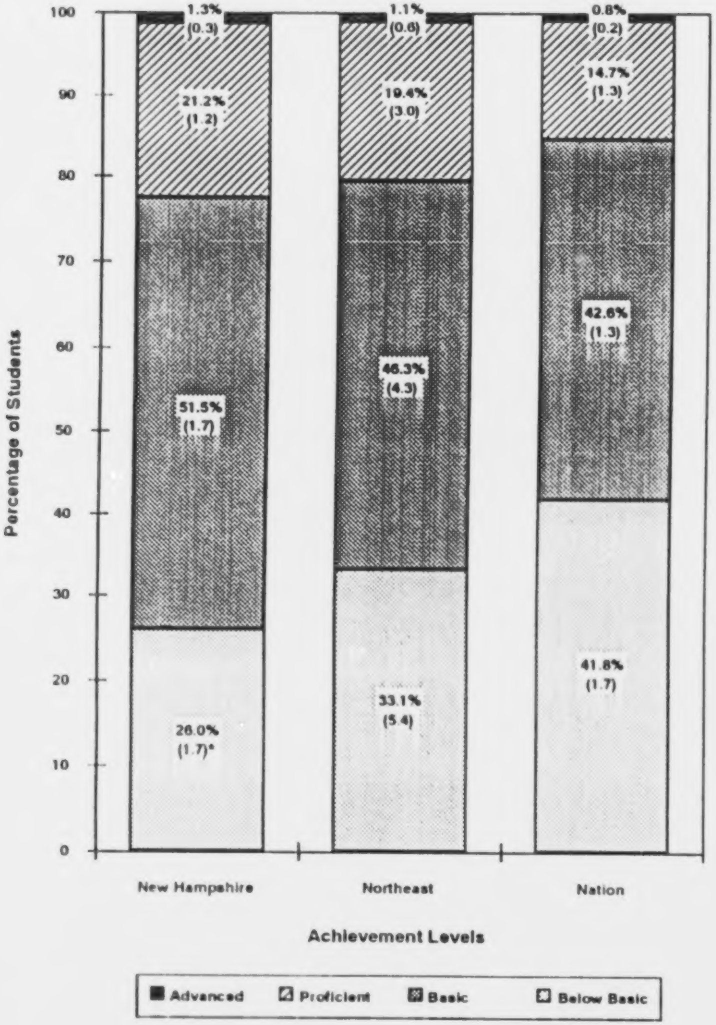
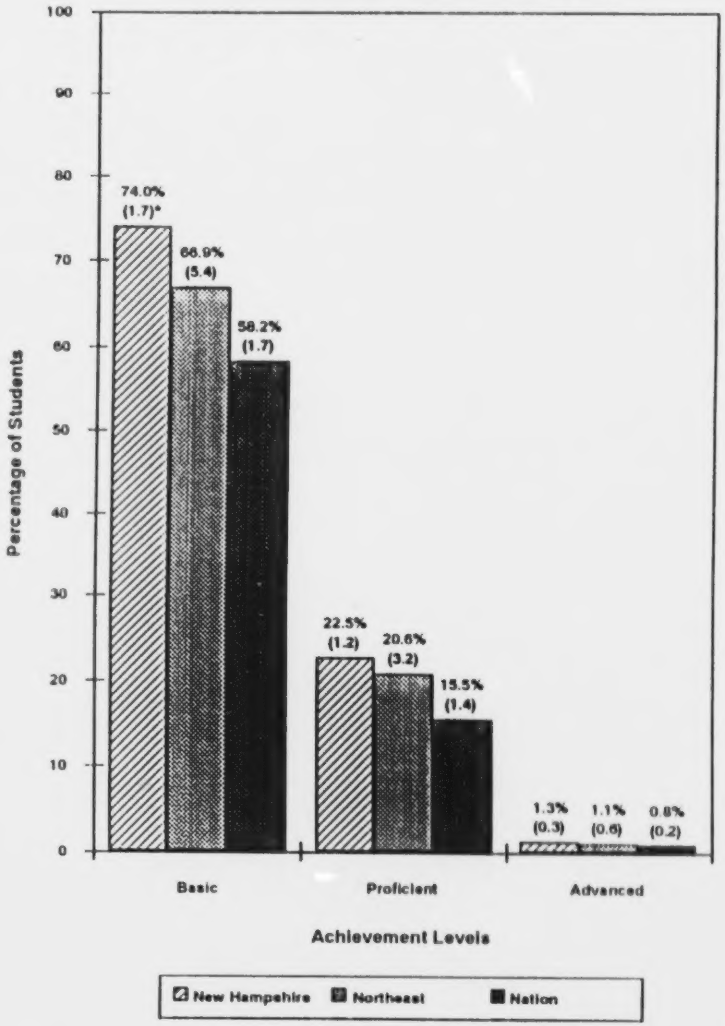


Figure 3.2-NH

Percentage of Students At or Above Grade 8 Achievement Levels for New Hampshire



* Standard errors are shown in parentheses

The results for New Hampshire have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[31] Tables 3.1-NH through 3.4-NH present these findings for New Hampshire and the most significant relationships are summarized below.

Male students in New Hampshire are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-NH). New Hampshire students of both genders, however, are more likely than their national counterparts to be at or above the basic level and female students in New Hampshire are also more likely to be at or above the proficient level than are female students in the nation as a whole.

Whites and Hispanics are the major race/ethnic groups in New Hampshire and the percentage of White students reaching the basic and proficient levels is higher than that of the Hispanics (see Table 3.2-NH). In New Hampshire, a larger percentage of White students reach the basic level than in the nation as a whole.

In New Hampshire, there are very few significant differences in performance among students from different types of communities (see Table 3.3-NH). The students from advantaged urban communities are more likely to be at or above the proficient level than those students from "other" communities. This is the only significant difference for New Hampshire communities. New Hampshire students from extreme rural and "other" communities, however, are more likely to be at or above the basic and proficient levels than students from similar communities across the nation.

In New Hampshire, as in the rest of the nation, student performance is strongly related to parental education. Students in New Hampshire whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than those students whose parents did not go beyond high school (see Table 3.4-NH). Students whose parents are college graduates are also more

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[31] See Appendix B for complete definitions of these subpopulations.

Table 3.1-NH

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

New Hampshire

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Male			
New Hampshire	73.9 (1.9)	21.8 (1.5)	1.4 (0.4)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
New Hampshire	74.1 (2.4)	23.2 (1.8)	1.2 (0.3)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
New Hampshire	74.0 (1.7)	22.5 (1.2)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-NH

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

New Hampshire

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
New Hampshire	74.8 (1.7)	23.0 (1.3)	1.4 (0.3)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
New Hampshire	*** (***)	*** (***)	*** (***)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
New Hampshire	46.7 (10.1)	5.4 (3.2)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
New Hampshire	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
New Hampshire	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
New Hampshire	74.0 (1.7)	22.5 (1.2)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-NH

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

New Hampshire

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
New Hampshire	76.3 (5.8)	31.3 (3.9)	3.8 (3.1)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
New Hampshire	*** (***)	*** (***)	*** (***)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
New Hampshire	77.2 (6.0)	28.2 (8.7)	3.9 (2.3)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
New Hampshire	75.5 (1.5)	22.6 (1.3)	1.1 (0.2)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
New Hampshire	74.0 (1.7)	22.5 (1.2)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-NH

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

New Hampshire

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
New Hampshire	46.5 (5.8)	5.9 (2.6)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
New Hampshire	58.6 (2.9)	10.7 (1.5)	0.0 (0.0)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
New Hampshire	80.6 (3.2)	22.0 (2.9)	0.5 (0.5)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
New Hampshire	86.2 (1.6)	32.8 (1.9)	2.7 (0.7)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
New Hampshire	74.0 (1.7)	22.5 (1.2)	1.3 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

likely to be at or above the proficient and advanced levels than students whose parents had some postsecondary education, but did not graduate from college. At every level of parental education, students from New Hampshire are more likely to reach the basic level than their national counterparts.

New Jersey

In New Jersey, 33.9 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-NJ). This is nearly the same as the percentage for the Northeast region (33.1 percent), but better than that for the nation as a whole (41.8 percent). Over two-fifths (43.3 percent) of the New Jersey students are performing at the basic level. Another one-fifth (21.1 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 1.7 percent meet the standards set for the advanced level.

Figure 3.2-NJ and the tables for New Jersey present the information in terms of the percentages of students "at or above" each achievement level. Almost two-thirds (66.1 percent) of New Jersey students are at or above the basic level. Just under one-fourth (22.8 percent) of New Jersey's Grade 8 students are at or above the proficient level while 1.7 percent of the students reach the advanced level. In all three cases, the percentages for New Jersey are similar to those for the Northeast region and above those for the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that nearly two-thirds of the Grade 8 public school students in New Jersey are likely to be able to interpret bar graphs, make conversions between units of measurement, and identify elementary geometric figures. The students at or above the proficient level can be expected to solve problems requiring decimals, fractions, and proportions, along with the translation of verbal problem situations into simple algebraic expressions. The 1.7 percent of the students at the advanced level are likely to be able to solve problems involving elementary concepts of probability.

Figure 3.1-NJ

Percentage of Students Below Basic and Within Each Achievement Level for New Jersey

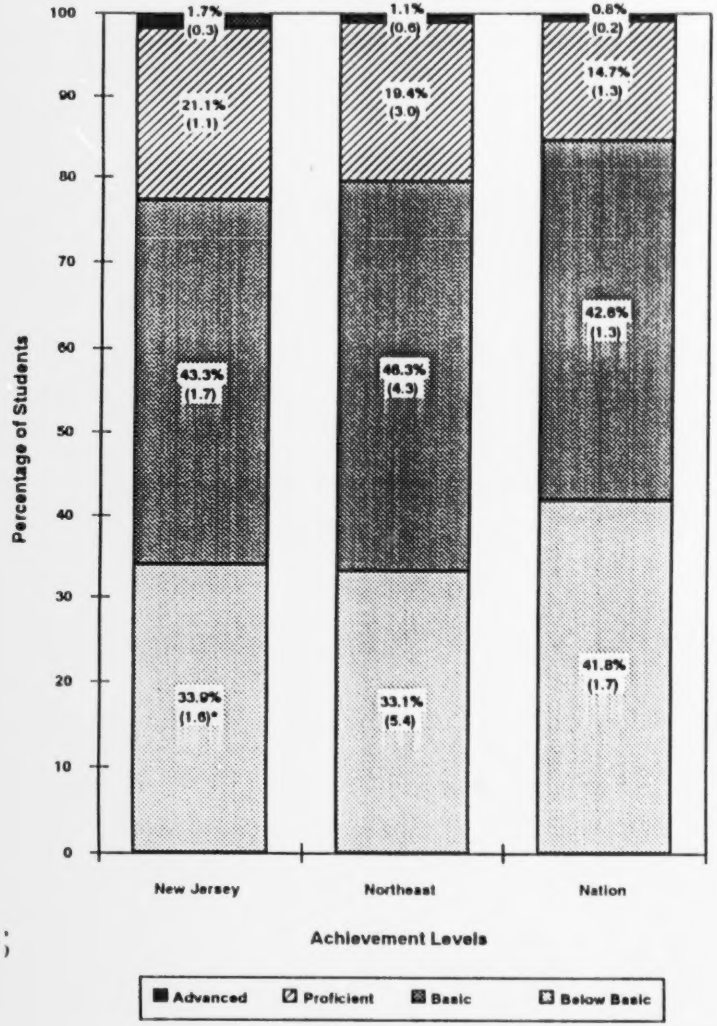
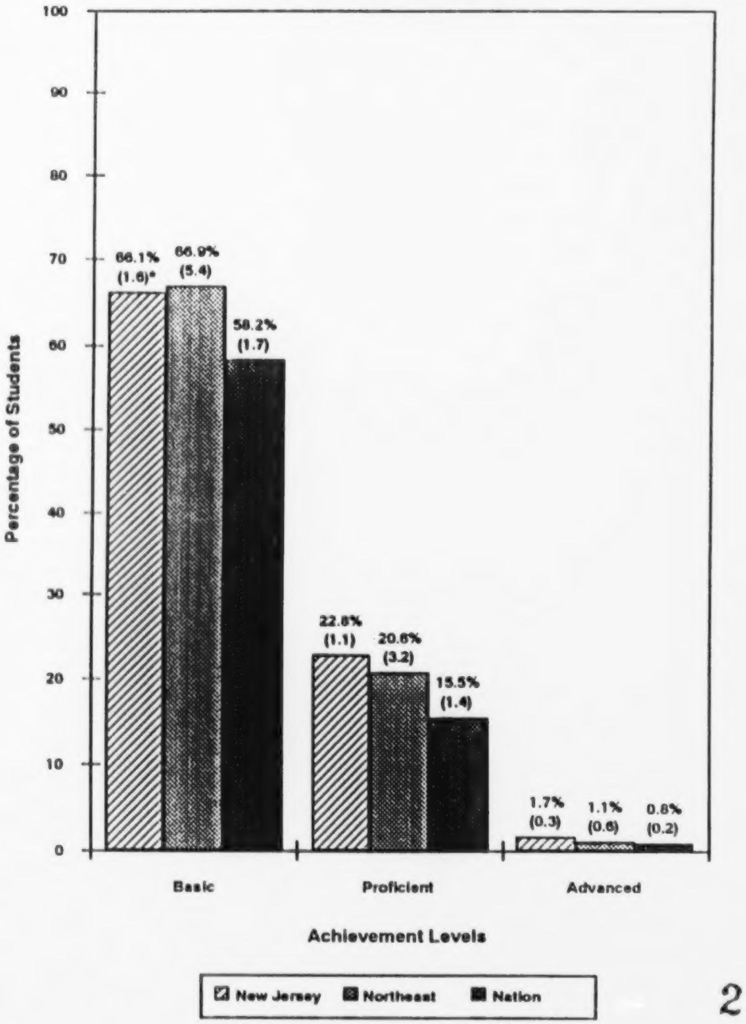


Figure 3.2-NJ

Percentage of Students At or Above Grade 8 Achievement Levels for New Jersey



* Standard errors are shown in parentheses

The results for New Jersey have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[32] Tables 3.1-NJ through 3.4-NJ present these findings for New Jersey and the most significant relationships are summarized below.

Male students in New Jersey are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-NJ). New Jersey students of both genders, however, are more likely than their national counterparts to be at or above the basic and proficient levels.

Whites, Blacks, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in New Jersey. The Asian/Pacific Island students have the highest percentages at or above the basic and proficient levels. The percentage of White students reaching the basic and proficient levels is lower than that of the Asian/Pacific Islanders, but higher than that of the other race/ethnic groups (see Table 3.2-NJ). The differences between Asian/Pacific Island and White students at or above the advanced level are not statistically significant. A larger percent of White and Asian/Pacific Island students reach the proficient level in New Jersey than in the nation as a whole. White students in New Jersey are also more likely to be at or above the basic level than their counterparts across the nation.

In New Jersey, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than are students from other types of communities (see Table 3.3-NJ). Students from disadvantaged urban communities are the least likely to be at or above the basic and proficient levels. In New Jersey, students from "other" communities are more likely to be at or above the basic and proficient levels than their national counterparts. Students from disadvantaged urban communities, however, appear less likely to be at or above these same levels than students from similar types of communities in the nation as a whole.

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[32] See Appendix B for complete definitions of these subpopulations.

Table 3.1-NJ

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

New Jersey

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
New Jersey	68.3 (1.9)	24.1 (1.5)	2.3 (0.5)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
New Jersey	63.8 (2.1)	21.4 (1.3)	1.2 (0.3)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
New Jersey	66.1 (1.6)	22.8 (1.1)	1.7 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-NJ

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

New Jersey

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
New Jersey	80.3 (1.4)	28.6 (1.5)	2.1 (0.4)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
New Jersey	25.8 (3.1)	3.2 (1.2)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
New Jersey	33.1 (3.5)	4.5 (1.3)	0.3 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
New Jersey	89.0 (3.1)	58.7 (7.0)	6.3 (2.1)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
New Jersey	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
New Jersey	66.1 (1.6)	22.8 (1.1)	1.7 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-NJ

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

New Jersey

	GRADE 8 ACHIEVEMENT LEVEL		
TYPE OF COMMUNITY	Basic	Proficient	Advanced
Advantaged Urban			
New Jersey	84.1 (2.2)	38.5 (3.4)	3.5 (1.1)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
New Jersey	23.7 (3.9)	1.9 (0.9)	0.0 (0.0)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
New Jersey	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
New Jersey	68.1 (2.8)	20.3 (1.7)	1.0 (0.3)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
New Jersey	66.1 (1.6)	22.8 (1.1)	1.7 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-NJ

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

New Jersey

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
New Jersey	42.7 (4.4)	4.6 (2.0)	0.1 (0.5)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
New Jersey	53.1 (2.9)	11.1 (1.6)	0.4 (0.4)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
New Jersey	71.5 (3.1)	18.4 (2.7)	1.4 (0.9)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
New Jersey	78.8 (1.7)	36.5 (2.0)	3.1 (0.6)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
New Jersey	66.1 (1.6)	22.8 (1.1)	1.7 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

In New Jersey, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at nearly every increment in the measure of parental education (see Table 3.4-NJ). (The only exception is a nonsignificant difference in the percentage at or above basic for students whose parents are high school graduates and those whose parents did not finish high school.) At most levels of parental education, students from New Jersey are about as likely to reach the basic and proficient levels as their national or regional counterparts.

New Mexico

In New Mexico, 50.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-NM). This is greater than the percentage for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Almost two-fifths (39.7 percent) of the New Mexico students are performing at the basic level. Just under 10 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.4 percent meet the standards set for the advanced level.

Figure 3.2-NM and the tables for New Mexico present the information in terms of the percentages of students "at or above" each achievement level. Exactly one-half of New Mexico's students are at or above the basic level. Just over 10 percent (10.3 percent) of New Mexico's Grade 8 students are at or above the proficient level. In both cases, this is below the regional and national percentages. In Grade 8, 0.4 percent of the students in New Mexico reach the advanced level, a rate not significantly different from those for the West region or the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that only about one-half of the Grade 8 students in New Mexico can be expected to solve simple problems involving addition, subtraction, multiplication, and division. These students are also likely to be able to use basic geometric terms and identify elementary geometric figures. About one-tenth of the students (those at or above the proficient level) can be expected to translate verbal problems into simple algebraic expressions and solve problems using decimals, fractions, or proportions. A very small percentage are likely to be able to use scale drawings, metric measurement, or other more advanced mathematical concepts.

Figure 3.1-NM

Percentage of Students Below Basic and Within Each Achievement Level for New Mexico

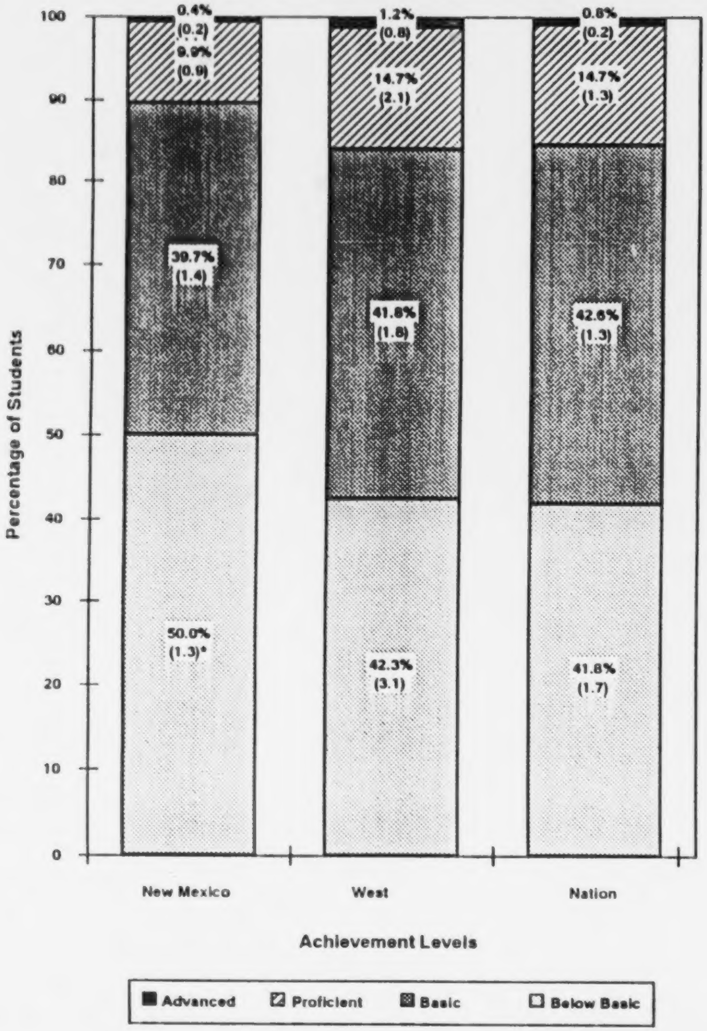
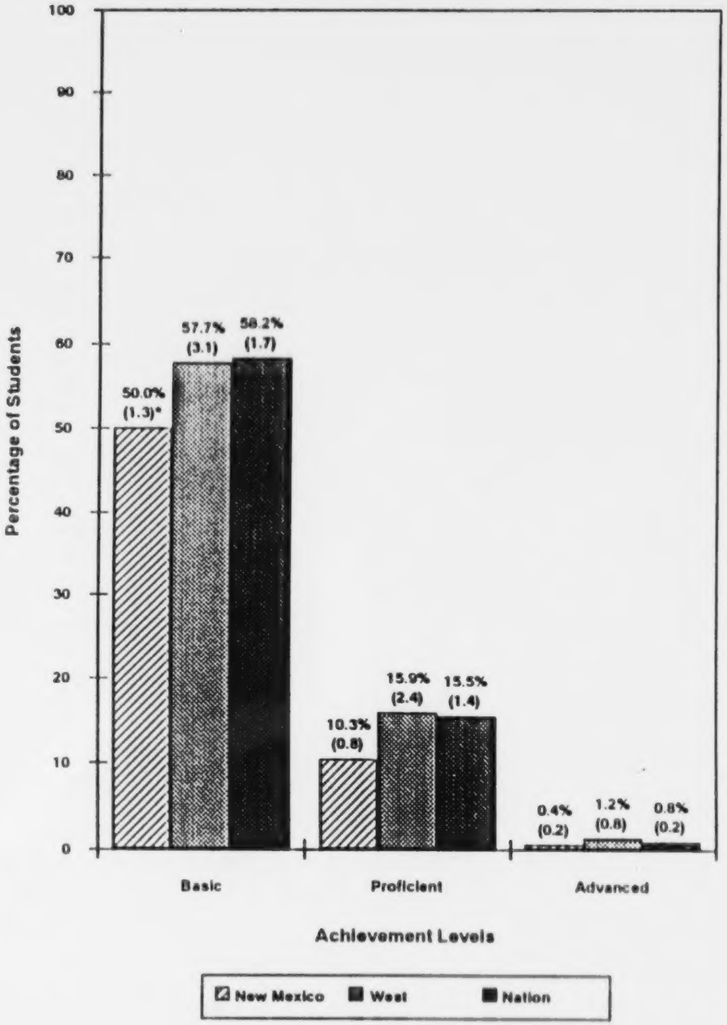


Figure 3.2-NM

Percentage of Students At or Above Grade 8 Achievement Levels for New Mexico



* Standard errors are shown in parentheses

The results for New Mexico have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[33] Tables 3.1-NM through 3.4-NM present these findings for New Mexico and the most significant relationships are summarized below.

Male students in New Mexico are more likely than female students to be at or above the basic and proficient levels (see Table 3.1-NM). There is no significant difference, however, in the percentages of males and females at or above the advanced level. Female students in New Mexico are less likely than their regional or national counterparts to be at or above the basic and proficient levels. Results for males in New Mexico are similar to those for males in the West region and the nation with one exception. A lower percentage of New Mexico males are at or above the proficient level than their counterparts in the nation as a whole.

Whites, Hispanics, and American Indians are the major race/ethnic groups in New Mexico. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-NM). A larger percentage of Hispanic students are at or above the basic level than American Indians. There are no significant differences among groups at the advanced level.

In New Mexico, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than are students from all other types of communities (see Table 3.3-NM). Students from extreme rural communities are less likely to be at or above the proficient level in New Mexico than students from other types of communities. In New Mexico, students from "other" communities are less likely to be performing at or above the basic and proficient levels than students from similar communities across the nation.

In New Mexico, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at nearly every increment in the measure of parental education (see Table 3.4-NM). (The only exception is a nonsignificant difference in the percentage at or above

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[33] See Appendix B for complete definitions of these subpopulations.

Table 3.1-NM

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

New Mexico

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
New Mexico	54.2 (1.9)	12.0 (1.1)	0.7 (0.3)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
New Mexico	45.9 (1.6)	8.6 (1.2)	0.1 (0.0)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
New Mexico	50.0 (1.3)	10.3 (0.8)	0.4 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-NM

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

New Mexico

	GRADE 8 ACHIEVEMENT LEVEL		
RACE/ETHNICITY	**Basic**	**Proficient**	**Advanced**
White			
New Mexico	72.7 (1.6)	20.6 (1.9)	0.8 (0.4)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
New Mexico	*** (***)	*** (***)	*** (***)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
New Mexico	36.5 (2.2)	3.2 (0.7)	0.0 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
New Mexico	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
New Mexico	25.0 (2.8)	1.5 (1.1)	0.0 (0.0)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
New Mexico	50.0 (1.3)	10.3 (0.8)	0.4 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-NM

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

New Mexico

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
New Mexico	87.9 (3.6)	35.4 (11.2)	2.0 (1.7)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
New Mexico	51.2 (7.7)	9.9 (2.3)	0.0 (0.0)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
New Mexico	48.0 (2.5)	5.3 (1.3)	0.1 (0.0)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
New Mexico	47.4 (1.6)	9.8 (1.0)	0.4 (0.2)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
New Mexico	50.0 (1.3)	10.3 (0.8)	0.4 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

Table 3.4-NM

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

New Mexico

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
New Mexico	25.7 (3.3)	2.2 (1.2)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
New Mexico	38.2 (2.6)	2.8 (1.0)	0.0 (0.0)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
New Mexico	59.2 (3.5)	10.0 (1.8)	0.4 (0.3)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
New Mexico	71.8 (1.9)	22.3 (2.2)	0.9 (0.5)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
New Mexico	50.0 (1.3)	10.3 (0.8)	0.4 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

proficient for students whose parents are high school graduates and those whose parents did not finish high school.) At most levels of parental education, students from New Mexico are about as likely to reach the basic and proficient levels than their national or regional counterparts. Students whose parents' formal education ended with high school, however, are less likely to be at the basic and proficient levels than their counterparts in the nation as a whole.

New York

In New York, 42.5 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-NY). This is not significantly greater than the percentage for the Northeast region (33.1 percent) or for the nation as a whole (41.2 percent). Just over two-fifths (42.1 percent) of the New York students are performing at the basic level. Another 15 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 1.1 percent meet the standards set for the advanced level.

Figure 3.2-NY and the tables for New York present the information in terms of the percentages of students "at or above" each achievement level. Over one-half (57.5 percent) of New York's students are at or above the basic level. Approximately one-sixth (16.2 percent) of New York's Grade 8 students are at or above the proficient level while 1.1 percent of the students in New York reach the advanced level. In all three cases, the percentages for New York students are not significantly different from those of the students in the Northeast region or in the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that nearly three-fifths of the students in New York are likely to be able to know when and how to use a calculator, and are able to estimate to arrive at an answer. Over 16 percent of the students (those at or above the proficient level) can be expected to compute with integers and are likely to show an understanding of the basic concepts of probability. The advanced students in this state are likely to be able to solve problems involving concepts of probability and to be able to interpret line graphs.

Figure 3.1-NY

Percentage of Students Below Basic and Within Each Achievement Level for New York

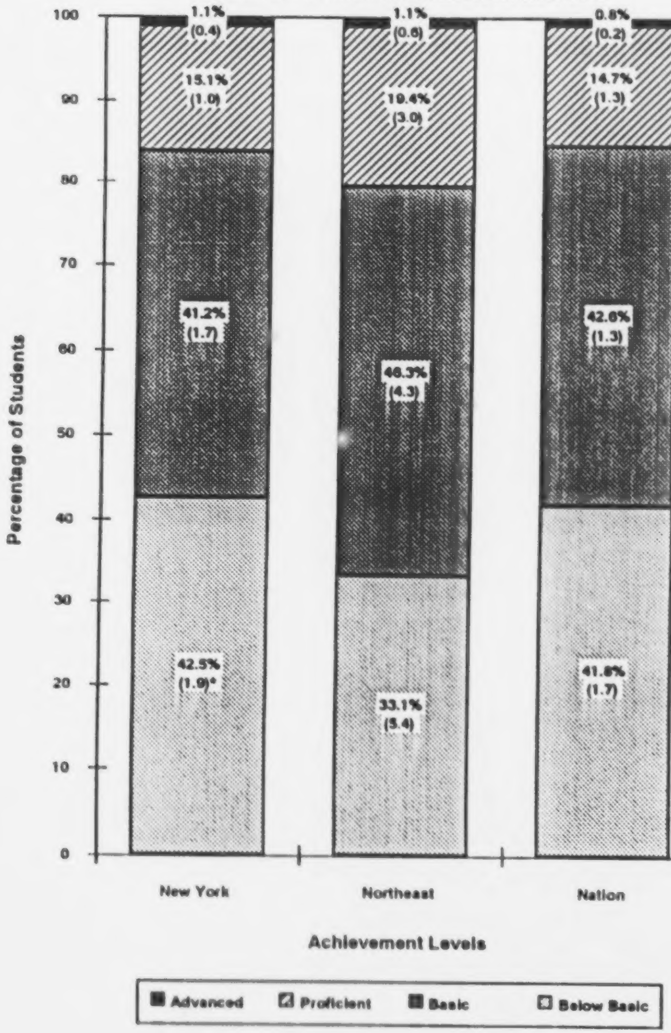
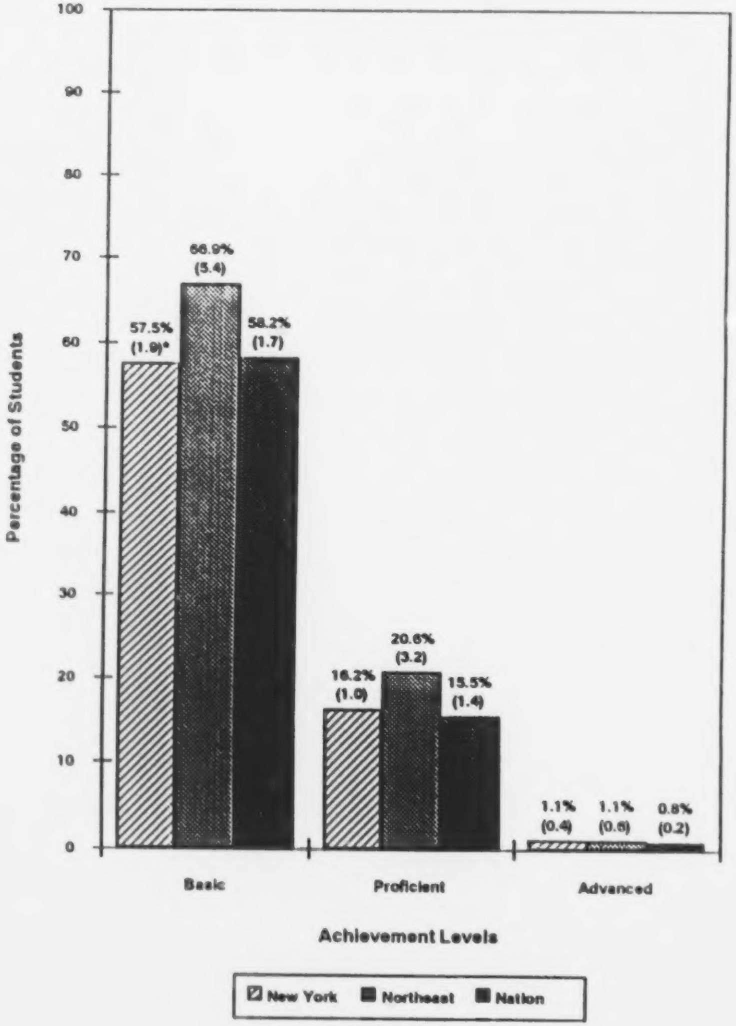


Figure 3.2-NY

Percentage of Students At or Above Grade 8 Achievement Levels for New York



* Standard errors are shown in parentheses

The results for New York have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[34] Tables 3.1-NY through 3.4-NY present these findings for New York and the most significant relationships are summarized below.

Male students in New York are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-NY). In nearly every case, New York students of both genders are about as likely as their regional or national counterparts to be at or above the basic, proficient, and advanced levels. The only exception is for females at or above the basic level, where New Yorkers are below their counterparts in the Northeast region.

Whites, Blacks, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in New York. The percentage of White and Asian/Pacific Island students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-NY). There are no statistically significant differences between White and Asian/Pacific Island students at the basic or advanced levels. However, the percentage of Asian/Pacific Islanders at or above the proficient level is greater than that for Whites. Most of the race/ethnic groups in New York have results similar to those of their regional and national counterparts. In New York, however, a larger percent of White students are at or above the basic level than in the nation as a whole.

In New York, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than are students from most other types of communities (see Table 3.3-NY). (The percentages at or above basic, proficient and advanced for students from extreme rural communities in New York are not significantly different from students in advantaged urban communities.) Students from disadvantaged urban communities are the least likely to be at or above the basic and proficient levels. Students from disadvantaged communities in New York appear to be less likely to be performing at or above the basic level than students from similar communities across the nation. Students from extreme rural communities appear to be performing better than their counterparts in the nation as a whole in

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[34] See Appendix B for complete definitions of these subpopulations.

Table 3.1-NY

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

New York

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
New York	59.0 (2.4)	17.7 (1.5)	1.4 (0.5)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
New York	56.0 (2.3)	14.8 (1.1)	0.8 (0.4)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
New York	57.5 (1.9)	16.2 (1.0)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-NY

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

New York

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
New York	74.7 (1.5)	22.2 (1.4)	1.5 (0.6)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
New York	24.1 (4.4)	3.2 (1.1)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
New York	28.5 (4.0)	4.6 (1.6)	0.1 (0.3)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
New York †	73.8 (6.1)	36.6 (6.1)	4.3 (2.4)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
New York	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
New York	57.5 (1.9)	16.2 (1.0)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-NY

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

New York

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
New York †	81.3 (3.3)	30.1 (3.9)	3.3 (1.1)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
New York	26.2 (3.2)	7.0 (2.2)	0.2 (0.0)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
New York †	74.1 (6.6)	25.8 (3.9)	0.3 (2.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
New York	70.3 (2.4)	18.4 (1.5)	1.2 (0.6)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
New York	57.5 (1.9)	16.2 (1.0)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-NY

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

New York

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
New York	31.3 (4.4)	2.2 (1.5)	0.3 (0.6)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
New York	49.6 (3.0)	6.7 (1.2)	0.1 (0.2)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
New York	63.5 (3.2)	16.6 (2.4)	0.9 (0.9)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
New York	72.2 (1.9)	27.3 (2.1)	2.3 (0.7)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
New York	57.5 (1.9)	16.2 (1.0)	1.1 (0.4)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

terms of both the basic and proficient levels. (These relationships need to be interpreted with caution, since the nature of the sample did not allow accurate determination of the variability for these subgroups.) Students from "other" New York communities are also more likely to be at or above the basic level than students from similar types of communities across the nation.

In New York, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at each increment in the measure of parental education (see Table 3.4-NY). At almost every level of parental education, however, students from New York are as likely to reach the basic and proficient levels as their national or regional counterparts. The only exception is for students whose parents are college graduates. In New York, this group is less likely to be at or above the basic level than their counterparts in the Northeast region.

North Carolina

In North Carolina, 56.7 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-NC). This is very close to the percentage for the Southeast region (53.5 percent), but well above that for the nation as a whole (41.8 percent). Approximately one-third (34.1 percent) of the North Carolina students are performing at the basic level. Nine percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.2 percent meet the standards set for the advanced level.

Figure 3.2-NC and the tables for North Carolina present the information in terms of the percentages of students "at or above" each achievement level. Over two-fifths (43.3 percent) of North Carolina's students are at or above the basic level. Just under one-tenth (9.2 percent) of North Carolina's Grade 8 students are at or above the proficient level. In Grade 8, 0.2 percent of the students in North Carolina reach the advanced level. In all three cases, these rates are similar to those for the Southeast region, but lower than those for the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that less than one-half of North Carolina's Grade 8 students are likely to be able to use the correct operations for solving one- and two-step problems or have a conceptual understanding of place value or fractions. Moreover, about one-tenth (those at or above the proficient level) are likely to be able to be able to read, interpret or construct line or circle graphs, or identify simple algebraic expressions. Very few students can be expected to solve a wide range of practical problems involving percents, proportions, or exponents.

Figure 3.1-NC

Percentage of Students Below Basic and Within Each Achievement Level for North Carolina

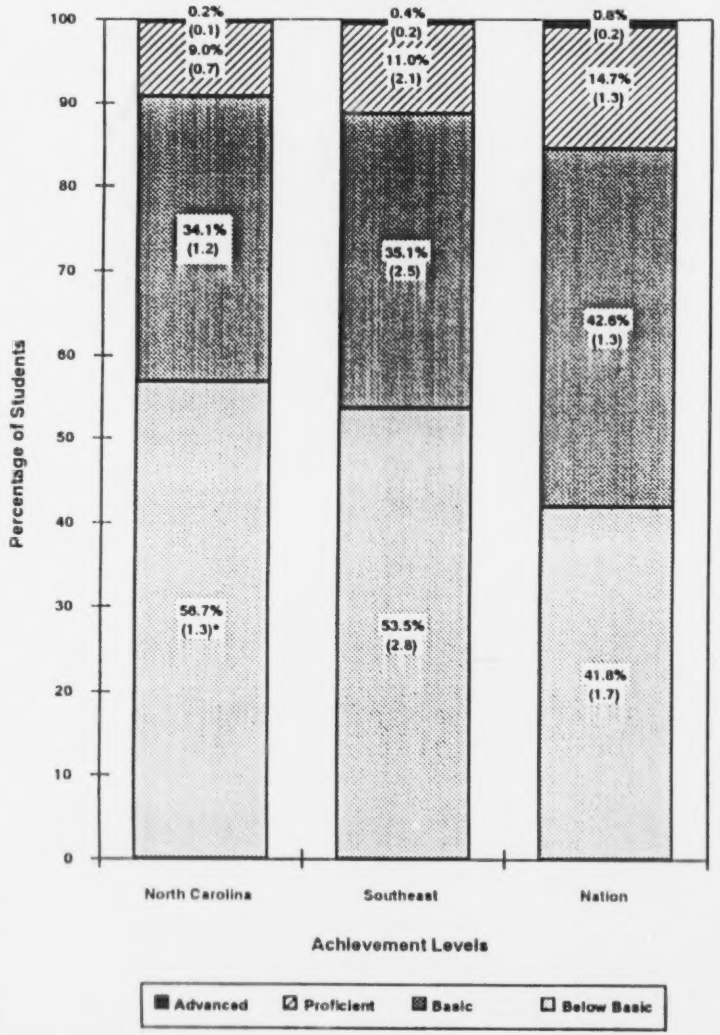
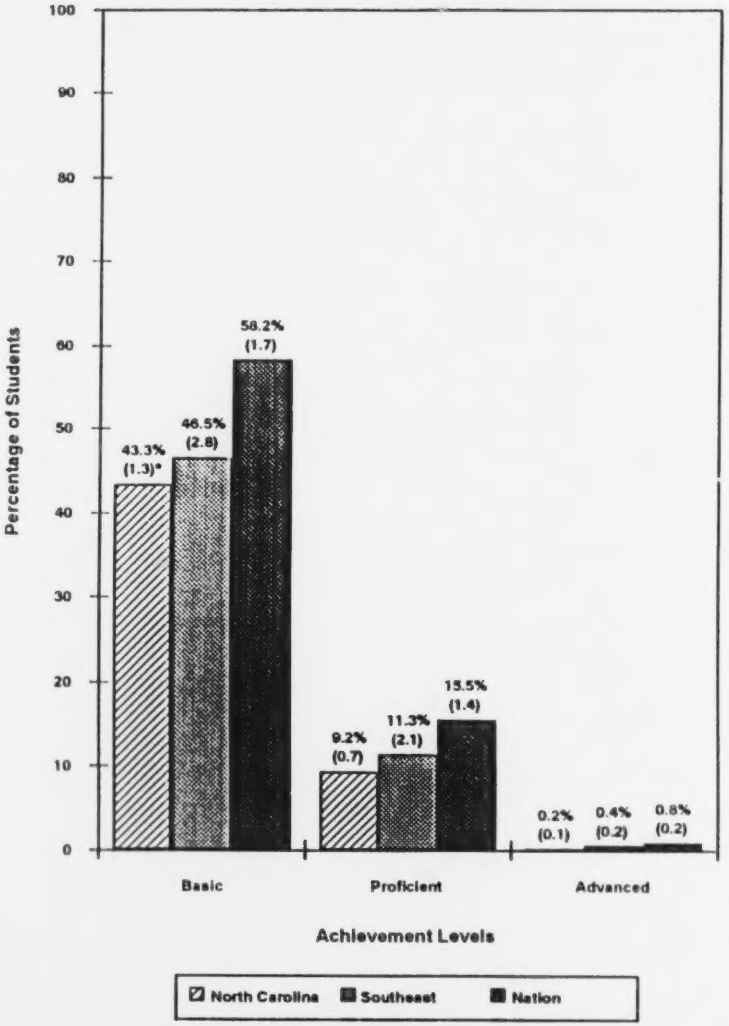


Figure 3.2-NC

Percentage of Students At or Above Grade 8 Achievement Levels for North Carolina



* Standard errors are shown in parentheses

The results for North Carolina have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[35] Tables 3.1-NC through 3.4-NC present these findings for North Carolina and the most significant relationships are summarized below.

Male students in North Carolina are no more likely than female students to be at or above the basic, proficient or advanced levels (see Table 3.1-NC). North Carolina students of both genders, however, are similar to their regional counterparts and less likely than their national counterparts to be at or above the basic and proficient levels.

Whites, Blacks, Hispanics, and American Indians are the major race/ethnic groups in North Carolina. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-NC). The percentage of Hispanics at or above the basic level is lower than that for Blacks and American Indians. There are no significant differences at or above the advanced level. A smaller percentage of White and Hispanic students reach the basic level in North Carolina than in the nation as a whole. In North Carolina, the percentages of White students at or above the basic and proficient levels are similar to those for White students in the Southeast region, but below those for White students in the nation as a whole.

In North Carolina, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than are students from all other types of communities (see Table 3.3-NC). Students from extreme rural communities in North Carolina are less likely to be at or above the basic and proficient levels than students from "other" communities.

In North Carolina, as in the rest of the nation, student performance is strongly related to parental education. Students in North Carolina whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-NC). Students whose parents are high school graduates are also more likely to be

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[35] See Appendix B for complete definitions of these subpopulations.

Table 3.1-NC

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

North Carolina

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Male			
North Carolina	42.8 (1.8)	9.3 (0.9)	0.2 (0.2)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
North Carolina	43.8 (1.7)	9.1 (0.9)	0.1 (0.1)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
North Carolina	43.3 (1.3)	9.2 (0.7)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-NC

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

North Carolina

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
North Carolina	57.6 (1.8)	13.4 (1.2)	0.2 (0.2)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
North Carolina	19.4 (1.6)	1.7 (0.6)	0.0 (0.0)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
North Carolina	10.7 (3.4)	1.3 (1.1)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
North Carolina	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
North Carolina †	24.4 (5.4)	2.8 (1.9)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
North Carolina	43.3 (1.3)	9.2 (0.7)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-NC

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

North Carolina

	GRADE 8 ACHIEVEMENT LEVEL		
TYPE OF COMMUNITY	**Basic**	**Proficient**	**Advanced**
Advantaged Urban			
North Carolina †	66.8 (8.7)	27.5 (3.7)	0.8 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
North Carolina †	35.6 (14.5)	7.6 (3.9)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
North Carolina	35.7 (3.3)	4.8 (1.7)	0.0 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
North Carolina	44.1 (1.5)	9.2 (0.9)	0.2 (0.2)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
North Carolina	43.3 (1.3)	9.2 (0.7)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-NC

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

North Carolina

	GRADE 8 ACHIEVEMENT LEVEL		
PARENTS' EDUCATION	Basic	Proficient	Advanced
Did Not Finish High School			
North Carolina	20.5 (2.4)	1.0 (0.9)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated After High School			
North Carolina	32.3 (1.9)	3.9 (0.8)	0.0 (0.0)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School	55.7 (2.9)	8.6 (1.2)	0.0 (0.0)
North Carolina	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Southeast	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Nation			
Graduated College			
North Carolina	60.5 (2.1)	18.9 (2.0)	0.5 (0.3)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
North Carolina	43.3 (1.3)	9.2 (0.7)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

at or above the basic level than students whose parents did not complete high school. Students whose parents are college graduates are more likely to be at or above the proficient level than students whose parents had some postsecondary education, but did not graduate from college. At every level of parental education, students from North Carolina are less likely to be at or above the basic levels than their national counterparts.

North Dakota

In North Dakota, 15.2 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-ND). This is substantially better than the percentage for the Central region (35.9 percent) and for the nation as a whole (41.8 percent). Over half (54.1 percent) of the students are performing at the basic level. Almost 30 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 1.8 percent meet the standards set for the advanced level.

Figure 3.2-ND and the tables for North Dakota present the information in terms of the percentages of students "at or above" each achievement level. Almost 85 percent of North Dakota's students are at or above the basic level. Over 30 percent of North Dakota's Grade 8 students are at or above the proficient level. In both cases, this is higher than the comparable percentages for the Central region and the nation. In Grade 8, 1.8 percent of the students in North Dakota reach the advanced level, a rate not significantly above the percentages for the region (0.7) or the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that 85 out of every 100 Grade 8 public school students in North Dakota can perform the four basic arithmetic operations in solving one- and two-step problems. Almost one-third of the students (those at or above the proficient level) can be expected to correctly answer more complex problems involving decimals, fractions, and percents. Approximately 2 percent of the students have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents.

Figure 3.1-ND

Percentage of Students Below Basic and Within Each Achievement Level for North Dakota

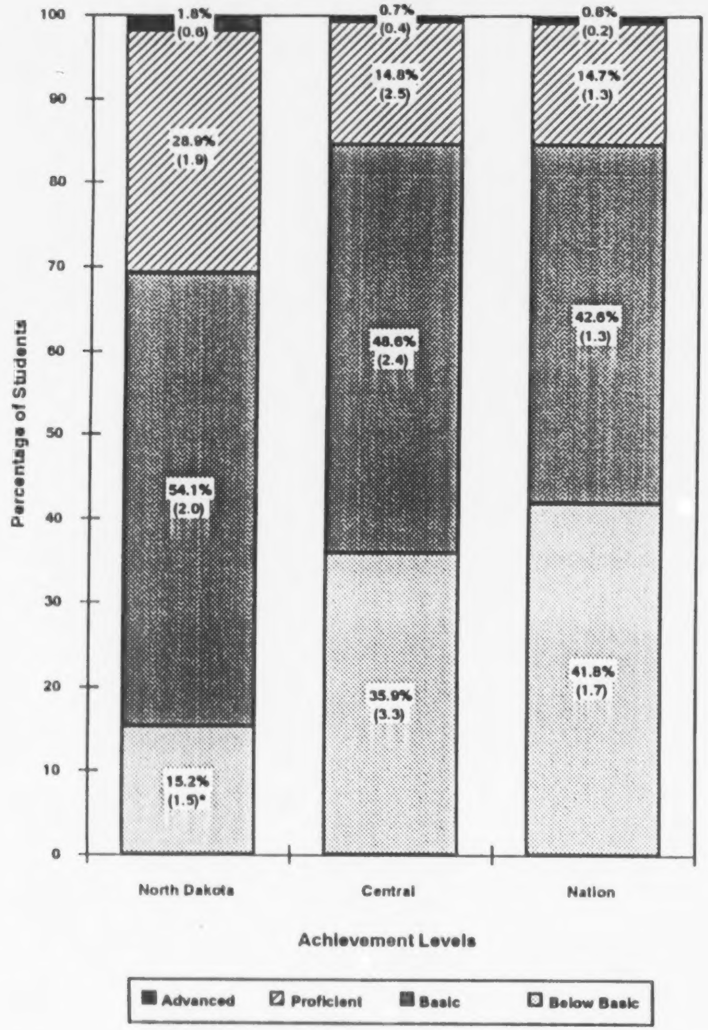
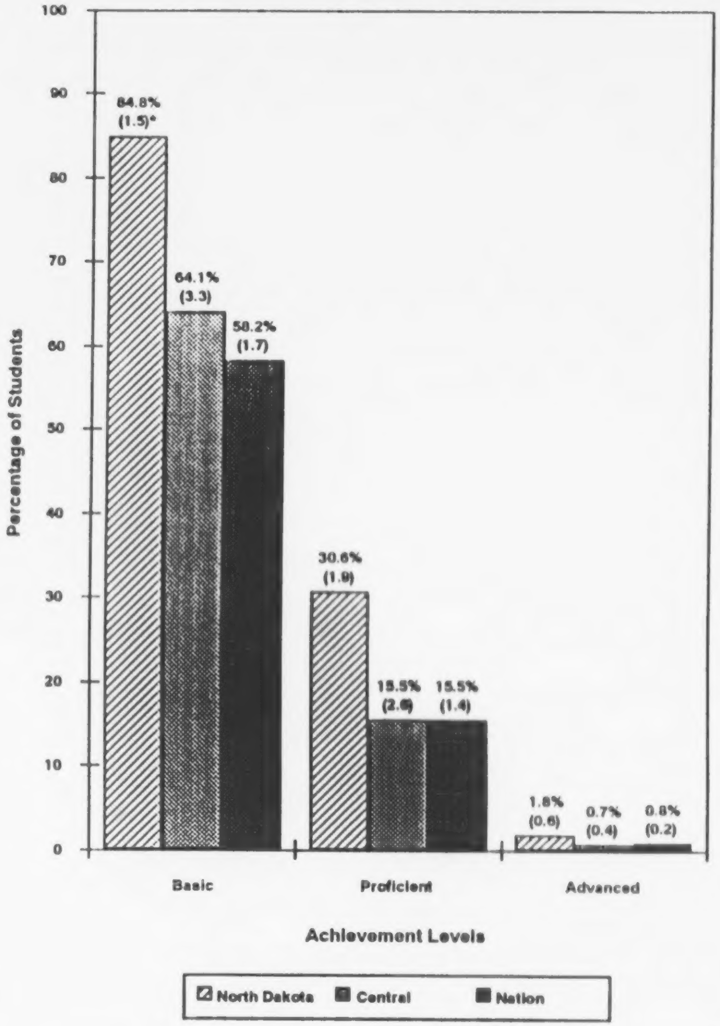


Figure 3.2-ND

Percentage of Students At or Above Grade 8 Achievement Levels for North Dakota



* Standard errors are shown in parentheses

The results for North Dakota have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[36] Tables 3.1-ND through 3.4-ND present these findings for North Dakota and the most significant relationships are summarized below.

Male students in North Dakota are more likely than female students to be at or above the proficient level (see Table 3.1-ND). There are no significant differences, however, in the percentages of males and females at or above the basic level or advanced levels. North Dakota students of both genders, however, are far more likely than their regional or national counterparts to be at or above the basic and proficient levels.

Whites, Hispanics, and American Indians are the major race/ethnic groups in North Dakota. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-ND). In North Dakota, a larger percentage of White students are at or above the basic and proficient levels than in the Central region or the nation as a whole.

There are no significant variations across community type in the results for North Dakota (see Table 3.3-ND). North Dakota students from extreme rural and "other" communities are much more likely than their regional or national counterparts to be at or above the basic and proficient levels.

In North Dakota, as in the rest of the nation, student performance is strongly related to parental education (see Table 3.4-ND). There are significant increases in the percentage of students at the basic and proficient level at nearly every increment in the measure of parental education. (The only exceptions are nonsignificant differences in the percentage at or above the basic and proficient level for students whose parents are college graduates and those whose parents had some postsecondary education, but did not graduate from college.) At almost every level of parental education, students from North Dakota are more likely to reach the basic and proficient levels than their regional or national counterparts.

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[36] See Appendix B for complete definitions of these subpopulations.

Table 3.1-ND

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

North Dakota

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
North Dakota	86.8 (1.7)	34.3 (2.6)	2.7 (1.1)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
North Dakota	82.6 (2.5)	26.7 (2.2)	0.8 (0.5)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
North Dakota	84.8 (1.5)	30.6 (1.9)	1.8 (0.6)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-ND

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

North Dakota

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
North Dakota	88.9 (1.0)	32.9 (2.0)	1.9 (0.6)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
North Dakota	*** (***)	*** (***)	*** (***)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
North Dakota	45.2 (7.7)	5.6 (4.3)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
North Dakota	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
North Dakota †	30.6 (6.4)	0.8 (0.7)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
North Dakota	84.8 (1.5)	30.6 (1.9)	1.8 (0.6)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-ND

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

North Dakota

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
North Dakota	88.9 (3.2)	36.0 (5.6)	2.7 (1.9)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
North Dakota	*** (***)	*** (***)	*** (***)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
North Dakota	82.6 (3.3)	31.0 (3.2)	0.7 (0.4)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
North Dakota	85.7 (1.8)	29.8 (2.5)	2.3 (1.1)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
North Dakota	84.8 (1.5)	30.6 (1.9)	1.8 (0.6)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-ND

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

North Dakota

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
North Dakota	51.9 (7.0)	4.9 (4.7)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
North Dakota	78.3 (3.3)	18.8 (3.8)	0.6 (0.6)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
North Dakota	88.5 (3.2)	31.7 (4.0)	0.6 (0.7)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
North Dakota	91.2 (1.2)	40.0 (2.1)	3.1 (1.1)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
North Dakota	84.8 (1.5)	30.6 (1.9)	1.8 (0.6)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Ohio

In Ohio, 39.6 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-OH). This is nearly the same as the percentage for the Central region (35.9 percent) and for the nation as a whole (41.8 percent). Over two-fifths (44.8 percent) of the Ohio students are performing at the basic level. Fifteen percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.7 percent meet the standards set for the advanced level.

Figure 3.2-OH and the tables for Ohio present the information in terms of the percentages of students "at or above" each achievement level. Over three-fifths (60.4 percent) of Ohio's students are at or above the basic level. Just under one-sixth (15.6 percent) of Ohio's Grade 8 students are at or above the proficient level and 0.7 percent are at or above the advanced level. In all three cases, the percentages for Ohio are very similar to those for the Central region and for the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that about three-fifths of the Grade 8 students in Ohio are likely to be able to solve problems using the four basic arithmetic operations. Another 15.6 percent of the students in this state have a conceptual understanding of measurement and geometric principles. The students at the advanced level (less than 1 percent of the total) can solve complex problems involving elementary concepts of probability and can apply basic geometric properties related to triangles and perpendicular and parallel lines.

The results for Ohio have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[37] Tables 3.1-OH through 3.4-OH present these findings for Ohio and the most significant relationships are summarized below.

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[37] See Appendix B for complete definitions of these subpopulations.

Figure 3.1-OH

Percentage of Students Below Basic and Within Each Achievement Level for Ohio

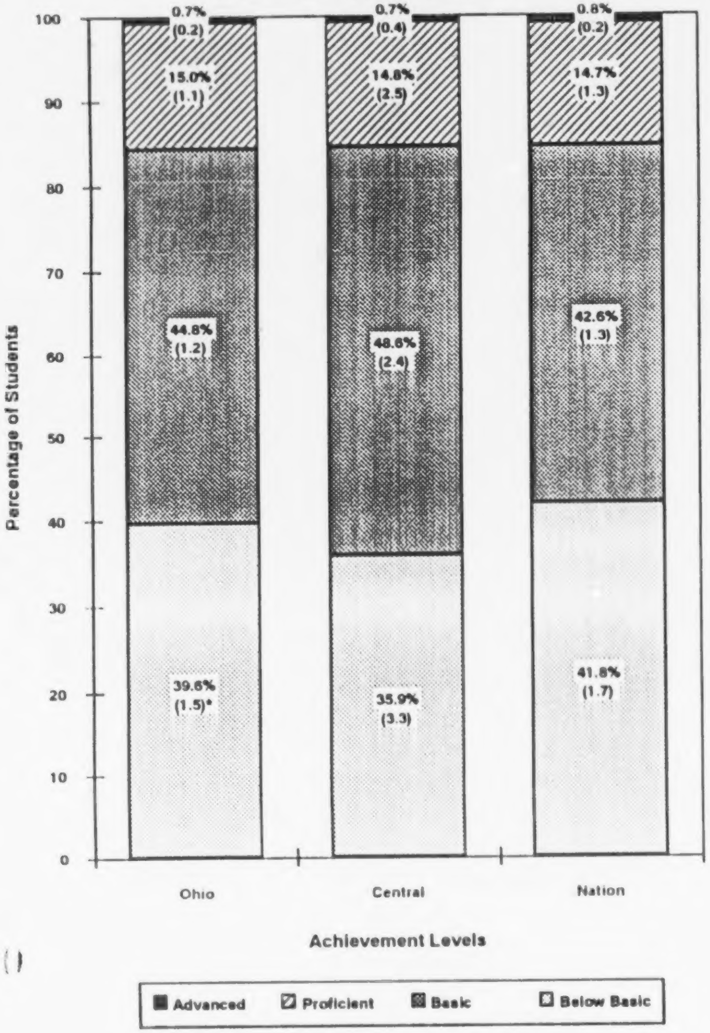
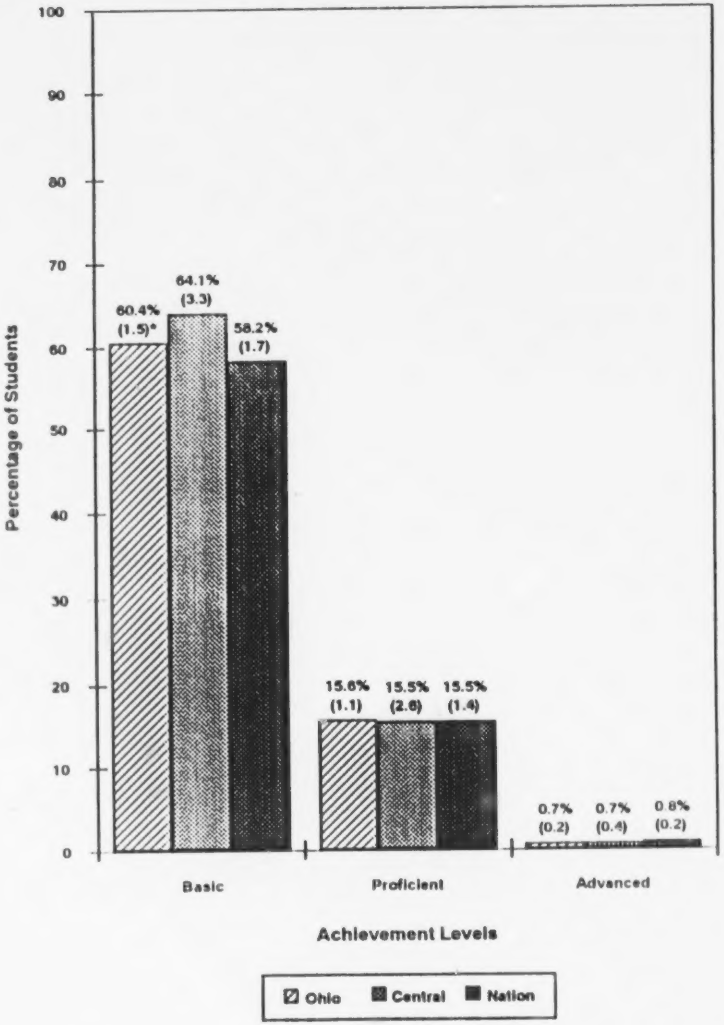


Figure 3.2-OH

Percentage of Students At or Above Grade 8 Achievement Levels for Ohio



* Standard errors are shown in parentheses

Male students in Ohio are more likely than female students to be at or above the basic level (see Table 3.1-OH). There are no significant differences, however, in the percentages of males and females at or above the proficient and advanced levels. Male students in Ohio are more likely than their national counterparts to be at or above the basic level. In all other cases, however, the performance of males and females in Ohio does not differ significantly from the comparable regional or national figures.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Ohio and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-OH). In Ohio, the results for each race/ethnic group are similar to the comparable figures for the nation as a whole.

In Ohio, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than are students from all other types of communities (see Table 3.3-OH). Students from disadvantaged urban communities in Ohio have the lowest percentages at or above the basic and proficient levels. In each type of community, the results for Ohio students are not appreciably different from their regional and national counterparts.

In Ohio, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at nearly every increment in the measure of parental education (see Table 3.4-OH). (The only exception is a nonsignificant difference in the percentage at or above basic for students whose parents are college graduates and those whose had some postsecondary education, but did not finish college.) At almost every level of parental education, students from Ohio are about as likely to reach the basic and proficient levels as their national or regional counterparts.

Table 3.1-OH

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Ohio

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Ohio	63.6 (1.5)	17.5 (1.7)	0.9 (0.3)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Ohio	56.8 (2.0)	13.5 (1.2)	0.3 (0.2)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Ohio	60.4 (1.5)	15.6 (1.1)	0.7 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-OH

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Ohio

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Ohio	67.3 (1.5)	17.6 (1.2)	0.7 (0.3)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Ohio	18.7 (2.0)	1.4 (1.0)	0.0 (0.0)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Ohio	25.4 (5.8)	2.3 (2.0)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Ohio	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Ohio	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Ohio	60.4 (1.5)	15.6 (1.1)	0.7 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-OH

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Ohio

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Ohio †	82.7 (2.8)	27.4 (3.9)	1.8 (0.8)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Ohio	29.6 (5.1)	5.9 (1.9)	0.1 (0.3)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Ohio †	67.6 (5.3)	14.7 (3.1)	0.3 (0.5)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Ohio	60.6 (1.9)	15.1 (1.2)	0.6 (0.2)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Ohio	60.4 (1.5)	15.6 (1.1)	0.7 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-OH

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Ohio

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Ohio	35.0 (4.7)	4.6 (1.5)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Ohio	51.4 (2.1)	8.4 (1.1)	0.2 (0.2)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Ohio	71.1 (2.2)	15.7 (1.8)	0.7 (0.5)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Ohio	72.8 (2.0)	26.2 (1.9)	1.3 (0.3)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Ohio	60.4 (1.5)	15.6 (1.1)	0.7 (0.2)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Oklahoma

In Oklahoma, 39.6 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-OK). This is very similar to the percentages for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Just under half (47.2 percent) of Oklahoma's students are performing at the basic level. Another 12.9 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.3 percent meet the standards set for the advanced level.

Figure 3.2-OK and the tables for Oklahoma present the information in terms of the percentages of students "at or above" each achievement level. Just over three-fifths (60.4 percent) of Oklahoma's students are at or above the basic level. Approximately one-eights (13.2 percent) of Oklahoma's Grade 8 students are at or above the proficient level. In both of these cases, the percentages for Oklahoma are not significantly different from those for the West region or the nation as a whole. In Grade 8, 0.3 percent of the students in Oklahoma reach the advanced level, a lower percentage than that for the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that about three-fifths of the Grade 8 students in Oklahoma are likely to be able to solve problems using the four basic arithmetic operations. About one-eighth of the students in this state have a conceptual understanding of measurement and geometric principles. The students at the advanced level (less than 1 percent of the total) can solve complex problems involving elementary concepts of probability and can apply basic geometric properties related to triangles and perpendicular and parallel lines.

Figure 3.2-OK

Percentage of Students Below Basic and Within Each Achievement Level for Oklahoma

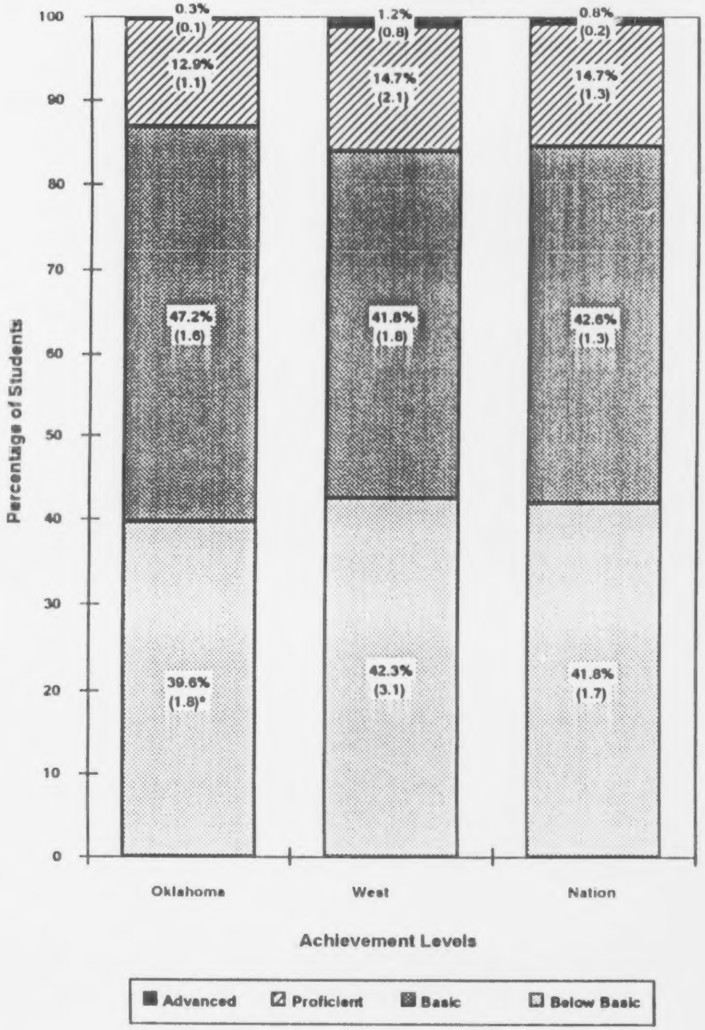
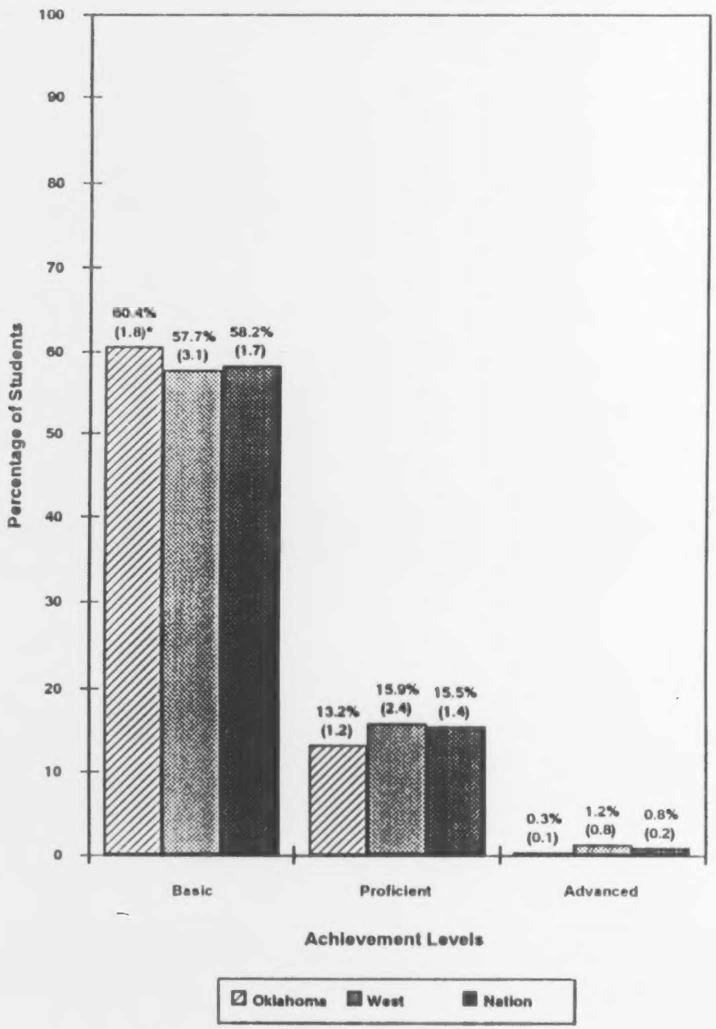


Figure 3.1-OK

Percentage of Students At or Above Grade 8 Achievement Levels for Oklahoma



* Standard errors are shown in parentheses

The results for Oklahoma have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[38] Tables 3.1-OK through 3.4-OK present these findings for Oklahoma and the most significant relationships are summarized below.

Male students in Oklahoma are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-OK). Oklahoma students of both genders are similar to their regional and national counterparts in terms of their percentages at or above the basic, proficient and advanced levels.

Whites, Blacks, Hispanics, and American Indians are the major race/ethnic groups in Oklahoma. The percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-OK). The percentage of Hispanics at or above the basic level is greater than that of Blacks, but less than that of the American Indians. In most cases, the results for each race/ethnic group in Oklahoma are similar to the groups' regional and nation figures.

In Oklahoma, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than those students from all other types of communities (see Table 3.3-OK). Students from disadvantaged urban and extreme rural communities in Oklahoma have the lowest percentages at or above the basic and proficient levels. Students from each type of Oklahoma community, however, are not appreciably different from their regional and national counterparts.

In Oklahoma, as in the rest of the nation, student performance is strongly related to parental education. Students in Oklahoma whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the basic and proficient levels than are students whose parents did not go beyond high school (see Table 3.4-OK). In addition, students whose parents are college graduates are more likely to be at or above the basic and proficient levels than those students whose parents have some postsecondary education, but did not graduate from college. At almost every level of parental

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[38] See Appendix B for complete definitions of these subpopulations.

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Table 3.1-OK

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Oklahoma

	GRADE 8 ACHIEVEMENT LEVEL		
GENDER	**Basic**	**Proficient**	**Advanced**
Male			
Oklahoma	63.8 (2.6)	14.9 (1.4)	0.5 (0.2)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Oklahoma	57.0 (2.2)	11.5 (1.4)	0.2 (0.2)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Oklahoma	60.4 (1.8)	13.2 (1.2)	0.3 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-OK

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Oklahoma

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Oklahoma	68.3 (1.7)	16.1 (1.3)	0.4 (0.2)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Oklahoma	21.7 (3.3)	0.6 (0.8)	0.0 (0.0)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Oklahoma	34.8 (5.3)	3.6 (2.1)	0.2 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Oklahoma	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Oklahoma	50.7 (4.8)	5.4 (3.1)	0.0 (0.0)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Oklahoma	60.4 (1.8)	13.2 (1.2)	0.3 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-OK

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Oklahoma

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Oklahoma †	85.6 (2.9)	27.5 (4.9)	0.1 (0.0)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Oklahoma †	42.0 (3.8)	4.5 (2.1)	0.1 (0.0)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Oklahoma	53.2 (4.7)	8.2 (2.4)	0.0 (0.2)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Oklahoma	62.7 (2.3)	14.0 (1.6)	0.6 (0.3)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Oklahoma	60.4 (1.8)	13.2 (1.2)	0.3 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

Table 3.4-OK

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Oklahoma

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Oklahoma	43.0 (4.4)	3.4 (2.1)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Oklahoma	45.0 (3.2)	5.0 (1.3)	0.0 (0.0)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Oklahoma	66.2 (3.1)	13.1 (2.0)	0.0 (0.0)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Oklahoma	74.1 (2.1)	22.0 (2.2)	0.9 (0.3)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Oklahoma	60.4 (1.8)	13.2 (1.2)	0.3 (0.1)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

education, students from Oklahoma are as likely to reach the basic and proficient levels as their regional or national counterparts. The exception is for students whose parents did not finish high school. In Oklahoma, students whose parents did not finish high school are more likely to be at or above the basic level than similar students across the nation.

Oregon

In Oregon, 30.1 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-OR). This is substantially better than the percentage for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Nearly half (47.3 percent) of the students in Oregon are performing at the basic level. Just over one-fifth (21.5 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 1.1 percent meet the standards set for the advanced level.

Figure 3.2-OR and the tables for Oregon present the information in terms of the percentages of students "at or above" each achievement level. Nearly 70 percent of Oregon's students are at or above the basic level. Over one-fifth (22.6 percent) of Oregon's Grade 8 students are at or above the proficient level. In both cases, the percentages for Oregon are higher than those for the West region and the nation as a whole. In Grade 8, 1.2 percent of the students in Oregon reach the advanced level, not significantly different from the percentages for the West region (1.2) or the nation as a whole (0.8 percent).

These percentages at or above the basic, proficient, and advanced levels mean that 69.9 percent of the public school students in Oregon can be expected to perform basic arithmetical operations, with or without a calculator. These same students are also likely to have a conceptual understanding of fundamental mathematical concepts such as place value, order of operations, and fractions. The nearly 23 percent of the students at or above the proficient level can be expected to solve more complex problems, classify geometric figures based on their properties, and show an understanding of the basic concepts of probability. The small percentage of students at the advanced level are likely to have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents. They can be expected to use scale drawings and solve problems involving concepts of probability.

Figure 3.1-OR

Percentage of Students Below Basic and Within Each Achievement Level for Oregon

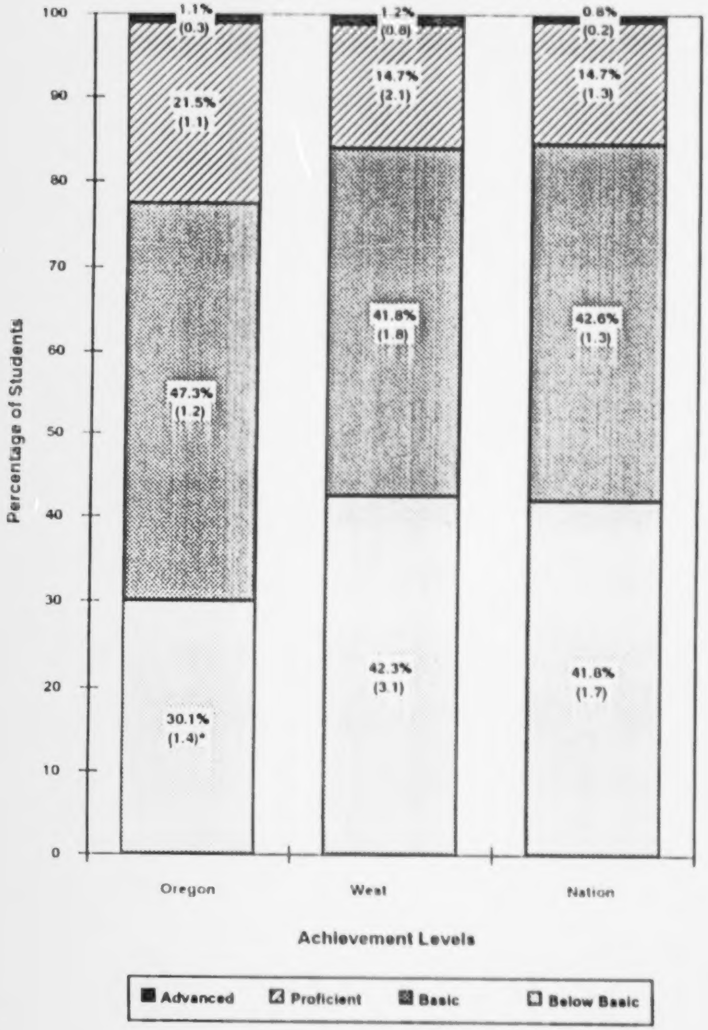
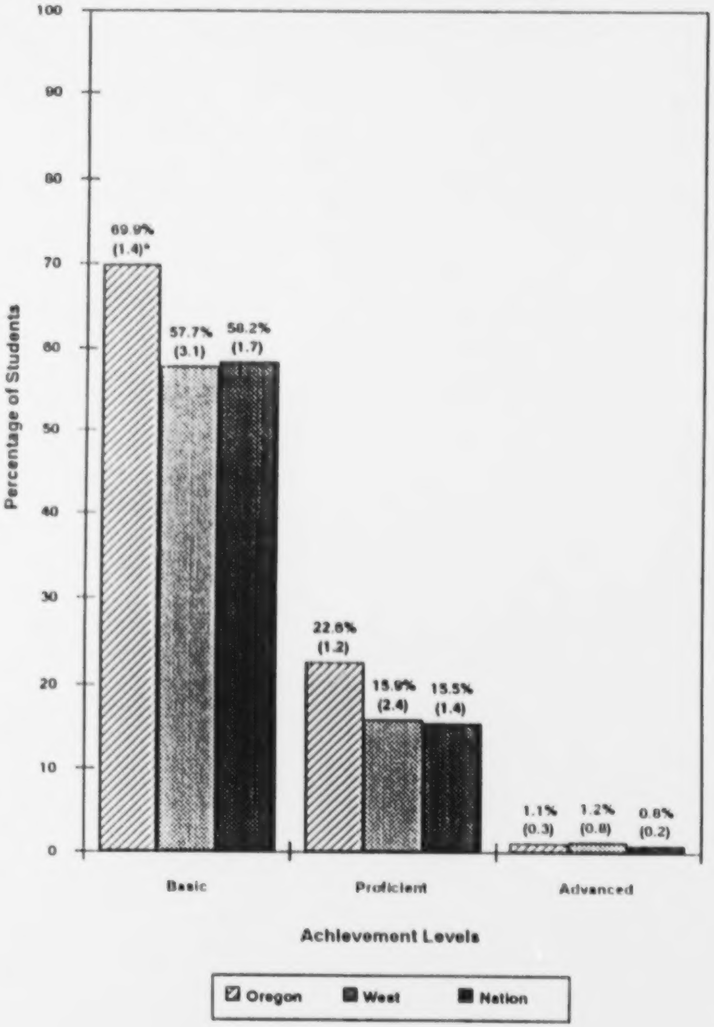


Figure 3.2-OR

Percentage of Students At or Above Grade 8 Achievement Levels for Oregon



* Standard errors are shown in parentheses

The results for Oregon have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[39] Tables 3.1-OR through 3.4-OR present these findings for Oregon and the most significant relationships are summarized below.

Male students in Oregon are more likely than female students to be at or above the proficient level (see Table 3.1-OR). There are no significant differences, however, in the percentages of males and females at or above the basic and advanced levels. Oregon students of both genders, however, are more likely than their regional or national counterparts to be at or above the basic and proficient levels.

Whites, Hispanics, Asian/Pacific Islanders, and American Indians are the major race/ethnic groups in Oregon. The percentage of Asian/Pacific Island and White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-OR). In Oregon, most of the race/ethnic groups are performing at about the same level as their regional and national counterparts.

In Oregon, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than are students from most other types of communities (see Table 3.3-OR). The differences between advantaged urban students and extreme rural students at or above the basic and proficient levels are not statistically significant. Students from disadvantaged urban communities in Oregon have the lowest percentages at or above the basic and proficient level, significantly lower than the "other" communities at the basic level and significantly lower than both the "other" communities and the extreme rural communities at the proficient level. Students in several types of communities in Oregon (disadvantaged urban, extreme rural, and "other") are more likely to be at or above the basic level than their national counterparts. In two of these types of communities (extreme rural and "other"), Oregon students are also more likely to be performing at or above the proficient levels than students from similar types of communities across the nation.

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[39] See Appendix B for complete definitions of these subpopulations.

Table 3.1-OR

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Oregon

GENDER	GRADE 8 ACHIEVEMENT LEVEL Basic	 Proficient	 Advanced
Male			
Oregon	69.8 (1.6)	24.9 (1.7)	1.4 (0.4)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Oregon	70.0 (1.8)	20.1 (1.4)	0.7 (0.3)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Oregon	69.9 (1.4)	22.6 (1.2)	1.1 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-OR

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Oregon

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Oregon	73.1 (1.3)	24.4 (1.3)	1.1 (0.3)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Oregon	*** (***)	*** (***)	*** (***)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Oregon	43.2 (5.0)	9.2 (2.3)	1.0 (0.9)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Oregon	77.8 (5.6)	32.1 (6.9)	0.9 (1.7)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Oregon	50.7 (6.3)	6.0 (2.9)	0.0 (0.0)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Oregon	69.9 (1.4)	22.6 (1.2)	1.1 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-OR

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Oregon

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Oregon †	79.4 (3.1)	33.0 (4.3)	1.6 (1.0)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Oregon †	56.3 (3.6)	10.3 (2.2)	0.2 (0.9)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Oregon †	67.3 (5.4)	22.8 (4.5)	0.5 (0.6)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Oregon	69.4 (1.8)	21.3 (1.3)	0.7 (0.3)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Oregon	69.9 (1.4)	22.6 (1.2)	1.1 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

Table 3.4-OR

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Oregon

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Oregon	42.3 (4.2)	3.7 (1.6)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Oregon	52.0 (2.3)	10.3 (1.7)	0.2 (0.2)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Oregon	79.0 (2.2)	25.0 (2.4)	0.9 (0.6)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Oregon	80.3 (1.3)	31.4 (1.9)	1.8 (0.5)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Oregon	69.9 (1.4)	22.6 (1.2)	1.1 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

In Oregon, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at nearly every increment in the measure of parental education (see Table 3.4-OR). (The only exception is a nonsignificant difference in the percentage at or above basic for students whose parents are college graduates and those whose parents had some postsecondary education, but did not finish college.) In Oregon, students whose parents graduated from college are also more likely to be at the advanced level than those students whose parents' formal education ended at or before high school. At almost every level of parental education, Oregon students are more likely to be at or above the basic level than their counterparts for the nation as a whole.

Pennsylvania

In Pennsylvania, 36.2 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-PA). This is similar to the percentage for the Northeast region (33.1 percent), but better than that for the nation as a whole (41.8 percent). Over two-fifths (44.7 percent) of the students in Pennsylvania are performing at the basic level. Just under one-fifth (18.2 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.9 percent meet the standards set for the advanced level.

Figure 3.2-PA and the tables for Pennsylvania present the information in terms of the percentages of students "at or above" each achievement level. Over three-fifths (63.8 percent) of Pennsylvania's students are at or above the basic level. This is higher than the comparable figure for the nation as a whole. One-fifth (19.1 percent) of Pennsylvania's Grade 8 students are at or above the proficient level and 0.9 percent of the students in Pennsylvania reach the advanced level. These two percentages are not significantly different from those for the Northeast region and the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that nearly two-thirds of the public school students in Pennsylvania can be expected to perform basic arithmetical operations, with or without a calculator. These same students are also likely to have a conceptual understanding of fundamental mathematical concepts such as place value, order of operations, and fractions. The 19.1 percent of the students at or above the proficient level can be expected to solve more complex problems, classify geometric figures based on their properties, and show an understanding of the basic concepts of probability. The small percentage of students at the advanced level are likely to have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents. They can able be expected to use scale drawings and solve problems involving concepts of probability.

Figure 3.1-PA

Percentage of Students Below Basic and Within Each Achievement Level for Pennsylvania

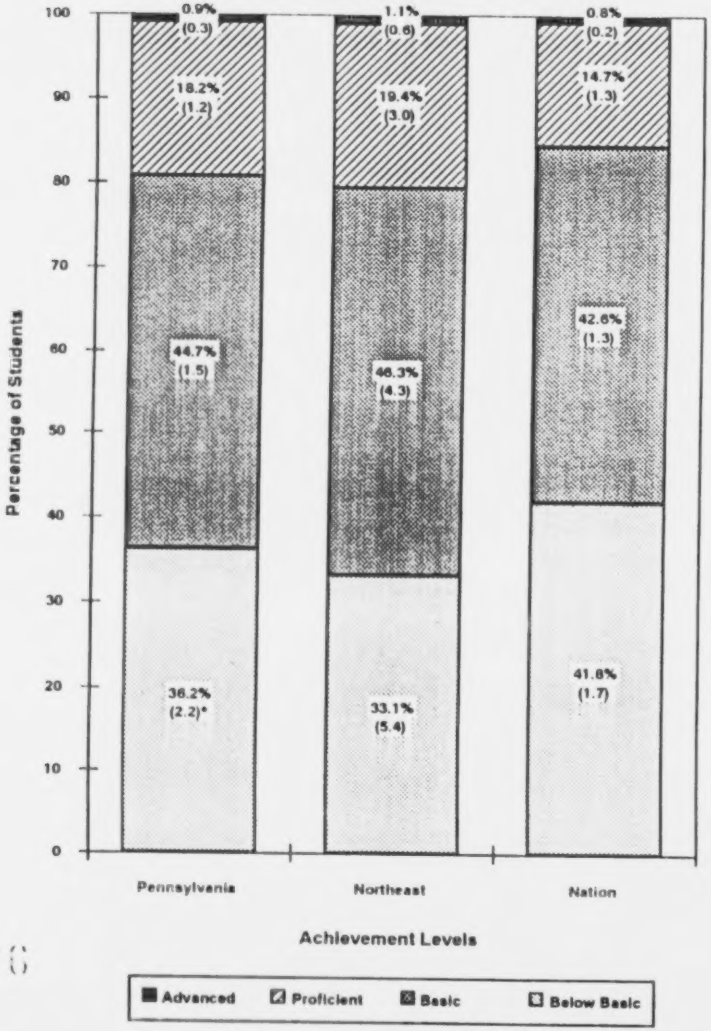
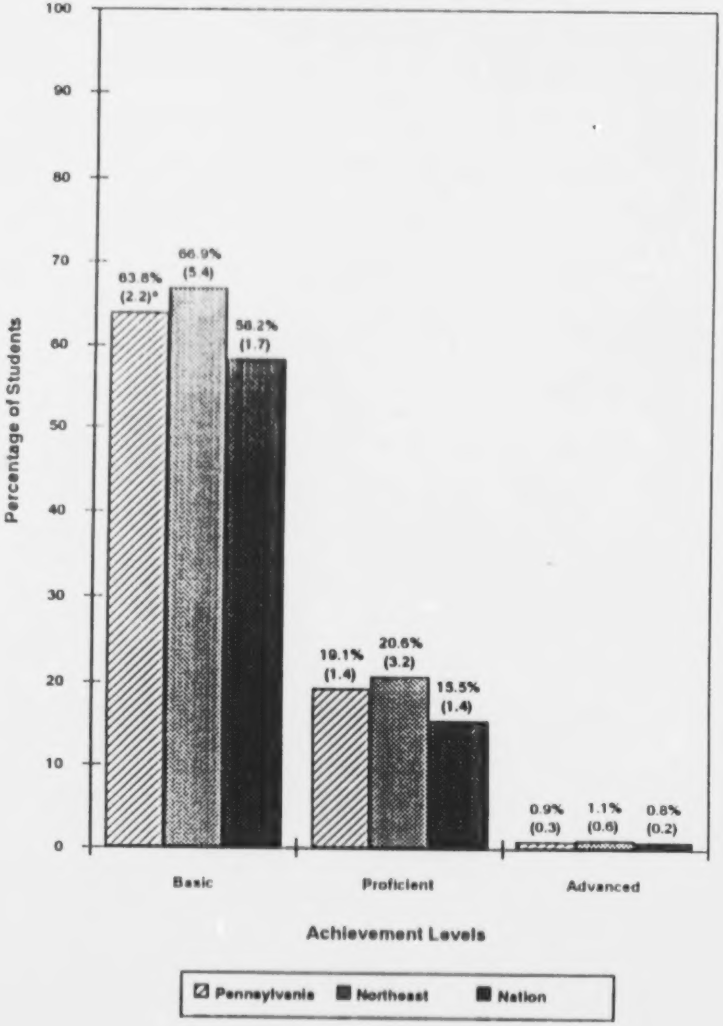


Figure 3.2-PA

Percentage of Students At or Above Grade 8 Achievement Levels for Pennsylvania



* Standard errors are shown in parentheses

The results for Pennsylvania have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[40] Tables 3.1-PA through 3.4-PA present these findings for Pennsylvania and the most significant relationships are summarized below.

Male students in Pennsylvania are more likely than female students to be at or above the proficient level (see Table 3.1-PA). There are no significant differences, however, in the percentages of males and females at or above the basic and advanced levels. Male students in Pennsylvania, however, are more likely than their national counterparts to be at or above the basic level.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Pennsylvania and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-PA). A smaller percentage of Hispanic students reach the basic level in Pennsylvania than in the nation as a whole.

In Pennsylvania, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than those students from all other types of communities (see Table 3.3-PA). Students from disadvantaged urban communities in Pennsylvania are less likely to be at or above the basic and proficient levels than students from all other types of communities. In most cases, students in each type of Pennsylvania community are not appreciably different from their regional and national counterparts. Extreme rural students from Pennsylvania, however, are more likely to be performing at or above the basic and proficient levels than students from similar communities across the nation. Students from "other" Pennsylvania communities are also more likely to be at or above the basic level than students from similar types of communities in the nation as a whole.

In Pennsylvania, as in the rest of the nation, student performance is strongly related to parental education. Students in Pennsylvania whose parents have some schooling beyond high school (college degrees or some education after high school) are more likely to reach the

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[40] See Appendix B for complete definitions of these subpopulations.

Table 3.1-PA

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Pennsylvania

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Pennsylvania	66.0 (2.2)	22.3 (1.9)	1.0 (0.5)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Pennsylvania	61.5 (2.7)	15.8 (1.3)	0.7 (0.3)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Pennsylvania	63.8 (2.2)	19.1 (1.4)	0.9 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-PA

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Pennsylvania

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Pennsylvania	71.9 (1.4)	21.8 (1.3)	0.9 (0.3)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Pennsylvania	24.7 (4.9)	3.5 (1.7)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Pennsylvania	19.1 (4.6)	2.5 (2.1)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Pennsylvania	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Pennsylvania	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Pennsylvania	63.8 (2.2)	19.1 (1.4)	0.9 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-PA

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Pennsylvania

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Pennsylvania	88.1 (1.8)	39.9 (3.9)	4.2 (2.0)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Pennsylvania †	35.1 (8.3)	8.0 (3.3)	0.3 (0.3)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Pennsylvania †	69.1 (4.5)	18.0 (2.5)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Pennsylvania	66.3 (2.2)	18.0 (1.4)	0.4 (0.3)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Pennsylvania	63.8 (2.2)	19.1 (1.4)	0.9 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-PA

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Pennsylvania

	GRADE 8 ACHIEVEMENT LEVEL		
PARENTS' EDUCATION	Basic	Proficient	Advanced
Did Not Finish High School			
Pennsylvania	41.8 (4.9)	3.0 (1.7)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Pennsylvania	51.6 (2.7)	8.2 (1.2)	0.0 (0.0)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Pennsylvania	72.8 (2.6)	18.9 (2.1)	0.2 (0.4)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Pennsylvania	79.1 (2.4)	34.8 (2.6)	2.3 (0.7)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Pennsylvania	63.8 (2.2)	19.1 (1.4)	0.9 (0.3)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

basic level than those students whose parents did not go beyond high school (see Table 3.4-PA). There are significant increases in the percentage of students at the proficient level at each increment in the measure of parental education. Students whose parents graduated from college are also more likely to be at the advanced level than those students whose parents are not college graduates. At most levels of parental education, students from Pennsylvania are about as likely to reach the basic and proficient levels than their regional or national counterparts. Pennsylvania students whose parents are college graduates, however, are more likely to be at or above the proficient level than their national counterparts. Pennsylvania students whose parents have some postsecondary education (but are not college graduates) are also more likely to be at or above the basic level than similar students across the nation.

Rhode Island

In Rhode Island, 44.8 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-RI). This is greater than the percentage for the Northeast region (33.1 percent) and similar to that for the nation as a whole (41.8 percent). Nearly two-fifths (39.9 percent) of the students in Rhode Island are performing at the basic level. Another 14.6 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.8 percent meet the standards set for the advanced level.

Figure 3.2-RI and the tables for Rhode Island present the information in terms of the percentages of students "at or above" each achievement level. Over one-half (55.2 percent) of Rhode Island's students are at or above the basic level. This is similar to the percentage for the nation as a whole, but below that for the Northeast region. Just under one-sixth (15.3 percent) of Rhode Island's Grade 8 students are at or above the proficient level while 0.8 percent are at or above the advanced level. These percentages are nearly identical to those for the nation as a whole, and not significantly different from those for the Northeast region.

These percentages at or above the basic, proficient, and advanced levels mean that about one-half of the students in Rhode Island are likely to be able to know when and how to use a calculator, and are able to estimate to arrive at an answer. Over 15 percent of the students (those at or above the proficient level) can be expected to compute with integers and are likely to show an understanding of the basic concepts of probability. The advanced students in this state are likely to be able to solve problems involving concepts of probability and to be able to interpret line graphs.

Figure 3.1-RI

Percentage of Students Below Basic and Within Each Achievement Level for Rhode Island

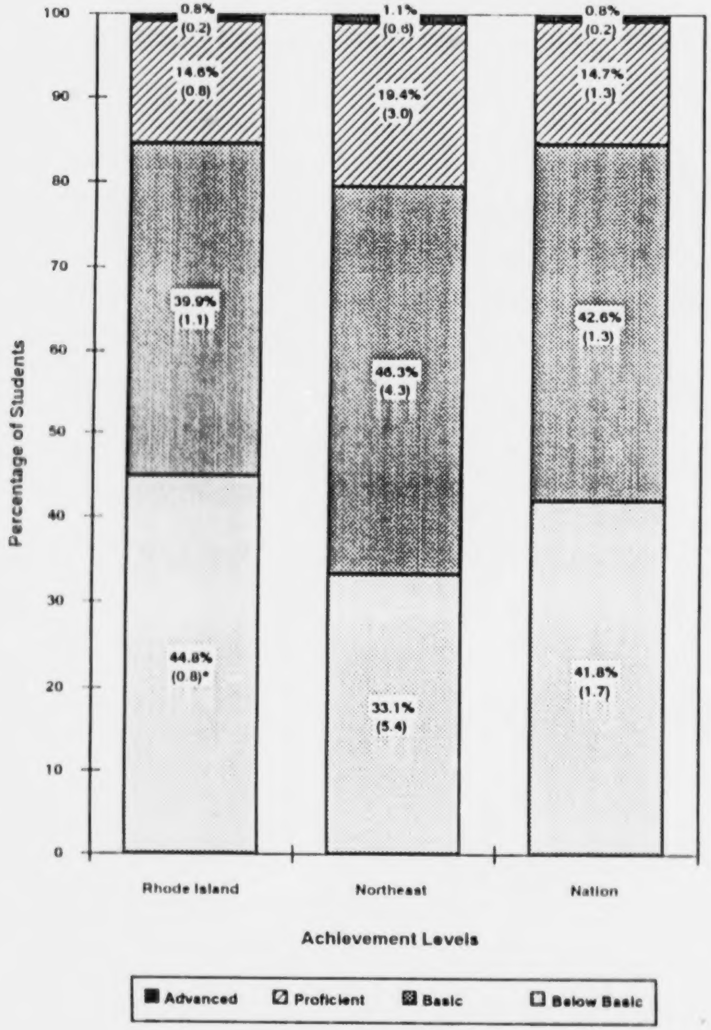
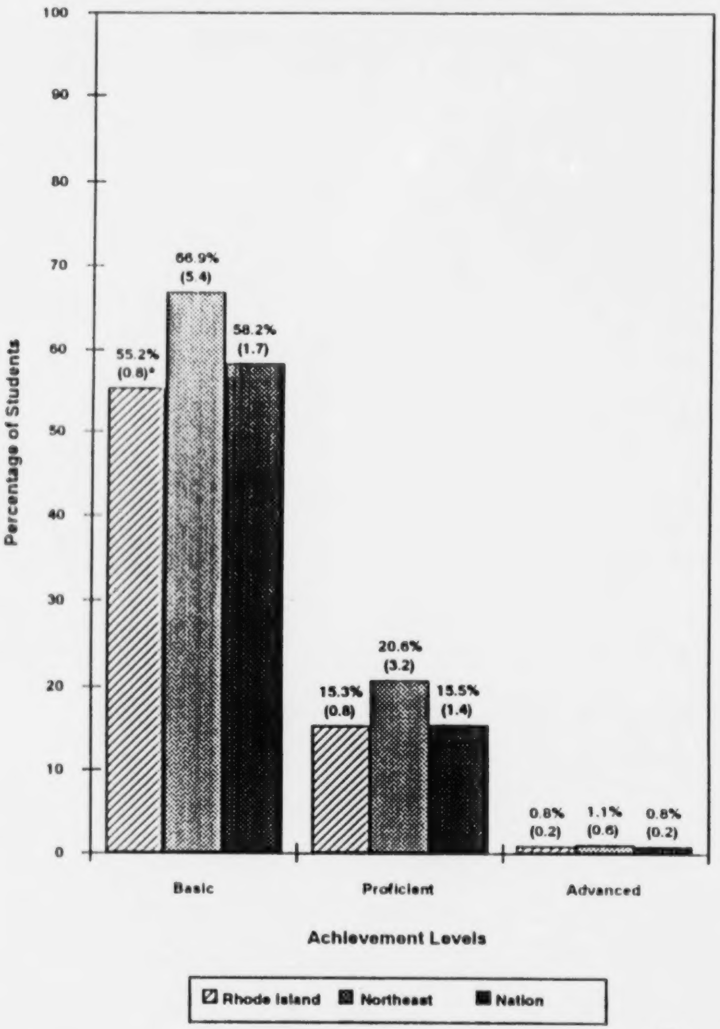


Figure 3.2-RI

Percentage of Students At or Above Grade 8 Achievement Levels for Rhode Island



* Standard errors are shown in parentheses

The results for Rhode Island have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[41] Tables 3.1-RI through 3.4-RI present these findings for Rhode Island and the most significant relationships are summarized below.

Male students in Rhode Island are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-RI). Males and females in Rhode Island perform at about the same level as their regional or national counterparts. The only exception is for females, who in Rhode Island are less likely to be at or above the basic level than are females in the Northeast region.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Rhode Island and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-RI). A smaller percentage of White, Black, and Hispanic students are at or above the basic level in Rhode Island than in the nation as a whole.

In Rhode Island, students from advantaged urban communities are more likely to be at or above the basic, proficient and advanced levels than are students from all other types of communities (see Table 3.3-RI). Students from disadvantaged urban communities in Rhode Island are less likely than students from "other" communities to be at or above the basic and proficient levels. In most cases, students in each type of Rhode Island communities are not appreciably different from their regional and national counterparts. (The exception is students from "other" communities who are less likely to be at or above the basic and proficient levels than students from similar communities in the Northeast region.)

In Rhode Island, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at almost every increment in the measure of parental education (see Table 3.4-RI). At almost every level of parental education, however, students from Rhode Island are about as likely to reach the basic and proficient levels as their national or regional

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[41] See Appendix B for complete definitions of these subpopulations.

Table 3.1-RI

Percentage of Students At or Above Achievement Levels By Gender 1990 NAEP Mathematics Assessment

Rhode Island

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Rhode Island	56.2 (1.4)	16.3 (1.2)	1.1 (0.4)
Northeast	66.1 (6.4)	23.9 (3.9)	1.4 (0.9)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Rhode Island	54.3 (1.3)	14.3 (1.1)	0.4 (0.2)
Northeast	67.7 (5.2)	17.2 (4.0)	0.8 (0.8)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Rhode Island	55.2 (0.8)	15.3 (0.8)	0.8 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-RI

Percentage of Students At or Above Achievement Levels By Race/Ethnicity 1990 NAEP Mathematics Assessment

Rhode Island

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
Rhode Island	62.2 (1.0)	17.8 (1.0)	0.8 (0.3)
Northeast	73.5 (5.9)	23.0 (3.1)	1.4 (0.8)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Rhode Island	14.4 (3.2)	1.8 (1.6)	0.0 (0.0)
Northeast †	33.4 (9.4)	4.6 (5.1)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Rhode Island	17.2 (3.2)	1.9 (1.0)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Rhode Island	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Rhode Island	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Rhode Island	55.2 (0.8)	15.3 (0.8)	0.8 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-RI

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Rhode Island

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Rhode Island	74.8 (1.9)	29.1 (2.6)	2.5 (0.9)
Northeast †	79.1 (8.8)	27.6 (10.5)	2.6 (2.9)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Rhode Island	36.3 (3.9)	7.4 (1.7)	0.4 (0.4)
Northeast †	32.1 (14.2)	7.9 (7.9)	0.2 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Rhode Island	*** (***)	*** (***)	*** (***)
Northeast	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Rhode Island	54.3 (1.2)	13.3 (1.0)	0.3 (0.3)
Northeast	72.2 (4.6)	22.8 (3.5)	1.0 (0.5)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Rhode Island	55.2 (0.8)	15.3 (0.8)	0.8 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-RI

Percentage of Students At or Above Achievement Levels By Parents' Education 1990 NAEP Mathematics Assessment

Rhode Island

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Rhode Island	29.2 (2.9)	2.7 (1.5)	0.0 (0.0)
Northeast	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Rhode Island	45.0 (1.7)	6.2 (1.1)	0.0 (0.0)
Northeast	54.5 (7.0)	8.1 (2.5)	0.2 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Rhode Island	64.2 (3.5)	16.1 (2.1)	0.5 (0.5)
Northeast	66.3 (4.5)	16.8 (3.9)	1.0 (1.8)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Rhode Island	72.3 (1.4)	26.8 (1.6)	1.7 (0.6)
Northeast	83.2 (4.6)	32.0 (5.0)	1.9 (1.2)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Rhode Island	55.2 (0.8)	15.3 (0.8)	0.8 (0.2)
Northeast	66.9 (5.4)	20.6 (3.2)	1.1 (0.6)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

counterparts. The single exception is that children of college graduates in Rhode Island are less likely to be at or above the basic level than similar students in the Northeast region.

Texas

In Texas, 47.6 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-TX). This is higher than the comparable percentage for the nation as a whole (41.8 percent). Just under two-fifths (39.2 percent) of the students in Texas are performing at the basic level. Nearly one-eighth (12.4 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.8 percent meet the standards set for the advanced level.

Figure 3.2-TX and the tables for Texas present the information in terms of the percentages of students "at or above" each achievement level. Just over one-half (52.4 percent) of Texas's students are at or above the basic level, a lower rate than for the nation as a whole. Approximately one-eighth (13.1 percent) of Texas's Grade 8 students are at or above the proficient level while 0.8 percent of the students in Texas reach the advanced level. In both of these cases, the percentages for Texas students are not significantly different from those for students in the West region or in the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that only about one-half of the Grade 8 students in Texas can be expected to solve simple problems involving addition, subtraction, multiplication, and division. These students are also likely to be able to use basic geometric terms and identify elementary geometric figures. About one-eighth of the students (those at or above the proficient level) can be expected to translate verbal problems into simple algebraic expressions and solve problems using decimals, fractions, or proportions. A very small percentage are likely to be able to use scale drawings, metric measurement, or other more advanced mathematical concepts.

Figure 3.1-TX

Percentage of Students Below Basic and Within Each Achievement Level for Texas

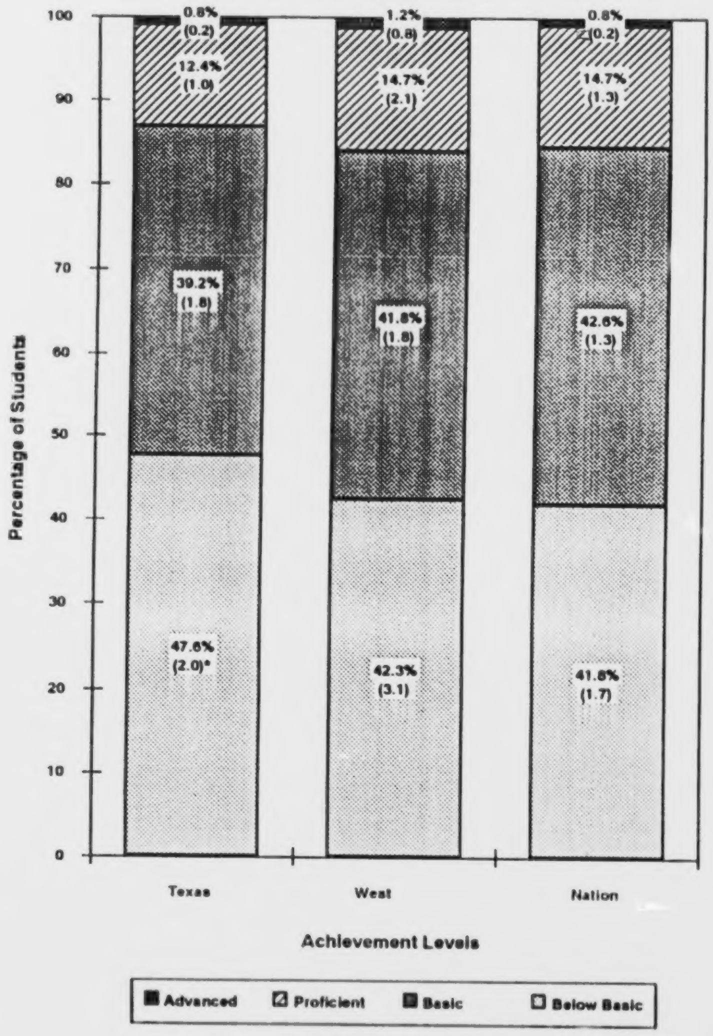
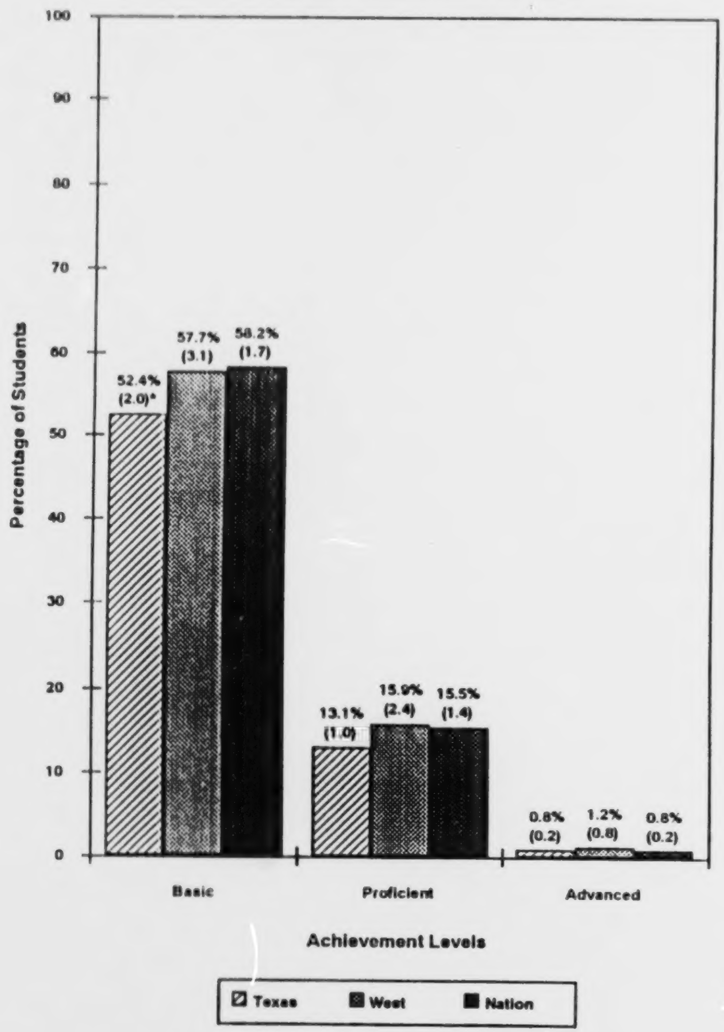


Figure 3.2-TX

Percentage of Students At or Above Grade 8 Achievement Levels for Texas



* Standard errors are shown in parentheses

The results for Texas have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[42] Tables 3.1-TX through 3.4-TX present these findings for Texas and the most significant relationships are summarized below.

Male students in Texas are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-TX). Texas students of each gender perform similarly to their regional and national counterparts. The only exception is that female student in Texas are less likely to be at or above the basic levels than female students in the nation as a whole.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Texas and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-TX). In Texas, the percentage of Hispanics is greater than the percentage of Blacks at or above the basic level. The results for the major race/ethnic groups in Texas are similar to the national totals for these same groups.

In Texas, students from advantaged urban communities are more likely to be at or above the basic and proficient levels than those students from all other types of communities (see Table 3.3-TX). Students from disadvantaged urban communities in Texas are the least likely to be at or above the basic and proficient levels. In most cases, students from each type of community in Texas are not appreciably different from their regional and national counterparts.

In Texas, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at nearly every increment in the measure of parental education (see Table 3.4-TX). (The only exception is a nonsignificant difference in the percentage at or above basic for students whose parents are college graduates and those whose parents had some postsecondary education, but did not finish college.) At almost every level of parental education, students from Texas are about as likely to reach the basic and proficient levels as

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[42] See Appendix B for complete definitions of these subpopulations.

Table 3.1-TX

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Texas

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Male			
Texas	54.2 (2.4)	14.6 (1.3)	1.1 (0.3)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Texas	50.6 (2.2)	11.7 (1.2)	0.5 (0.3)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Texas	52.4 (2.0)	13.1 (1.0)	0.8 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-TX

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Texas

	GRADE 8 ACHIEVEMENT LEVEL		
RACE/ETHNICITY	Basic	Proficient	Advanced
White			
Texas	73.2 (1.9)	22.3 (1.6)	1.5 (0.4)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Texas	20.1 (2.6)	1.3 (0.7)	0.1 (0.0)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Texas	34.9 (2.5)	3.7 (0.8)	0.0 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Texas	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Texas	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Texas	52.4 (2.0)	13.1 (1.0)	0.8 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-TX

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Texas

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Advantaged Urban			
Texas †	76.8 (3.2)	25.0 (3.6)	1.8 (1.0)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Texas †	32.0 (3.1)	7.1 (1.3)	0.2 (0.5)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Texas †	59.2 (5.9)	13.8 (3.0)	0.7 (0.8)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Texas	51.9 (2.7)	12.0 (1.3)	0.6 (0.3)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Texas	52.4 (2.0)	13.1 (1.0)	0.8 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

Table 3.4-TX

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Texas

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Texas	31.8 (3.1)	1.7 (0.8)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Texas	40.2 (2.4)	5.5 (1.2)	0.1 (0.2)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Texas	65.7 (2.8)	15.8 (1.8)	0.6 (0.4)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Texas	72.5 (2.2)	26.0 (1.9)	1.8 (0.5)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Texas	52.4 (2.0)	13.1 (1.0)	0.8 (0.2)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

their national or regional counterparts. The only exception is for students whose parents' highest level of education is high school graduation. In Texas, these students have lower percentages at or above the basic level than similar students in the nation as a whole.

Virginia

In Virginia, 42.1 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-VA). This is substantially better than the percentage for the Southeast region (53.5 percent) and very similar to the percentage for the nation as a whole (41.8 percent). Just under two-fifths (38.9 percent) of the students in Virginia are performing at the basic level. One-sixth (16.6) percent of the students in this state are able to satisfy the requirements set for the proficient level, while 2.3 percent meet the standards set for the advanced level.

Figure 3.2-VA and the tables for Virginia present the information in terms of the percentages of students "at or above" each achievement level. Almost three-fifths (57.9 percent) of Virginia's students are at or above the basic level. Nearly one-fifth (18.9 percent) of Virginia's Grade 8 students are at or above the proficient level while 2.3 percent of the students in Virginia reach the advanced level. In each case, the percentages for Virginia students are similar to those for the nation as a whole and significantly above those for the Southeast region.

These percentages at or above the basic, proficient, and advanced levels mean that about three-fifths of the Grade 8 students in Virginia are likely to be able to solve problems using the four basic arithmetic operations. Another one-fifth of the students in this state have a conceptual understanding of measurement and geometric principles. The students at the advanced level (2.3 percent of the total) can solve complex problems involving elementary concepts of probability and can apply basic geometric properties related to triangles and perpendicular and parallel lines.

Figure 3.2-VA

Percentage of Students Below Basic and Within Each Achievement Level for Virginia

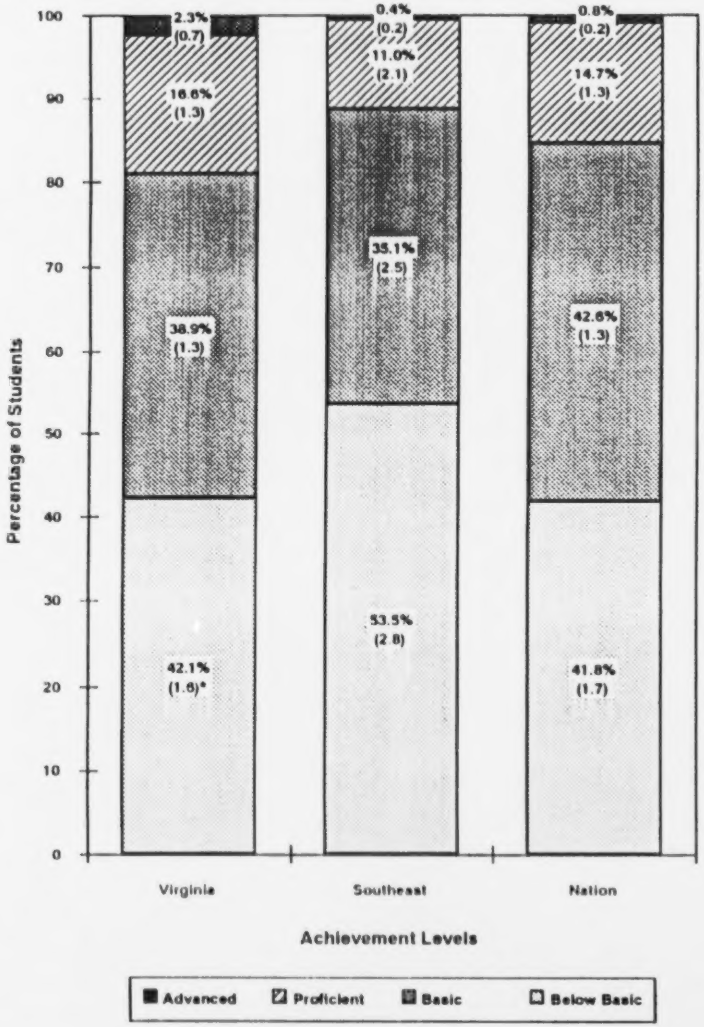
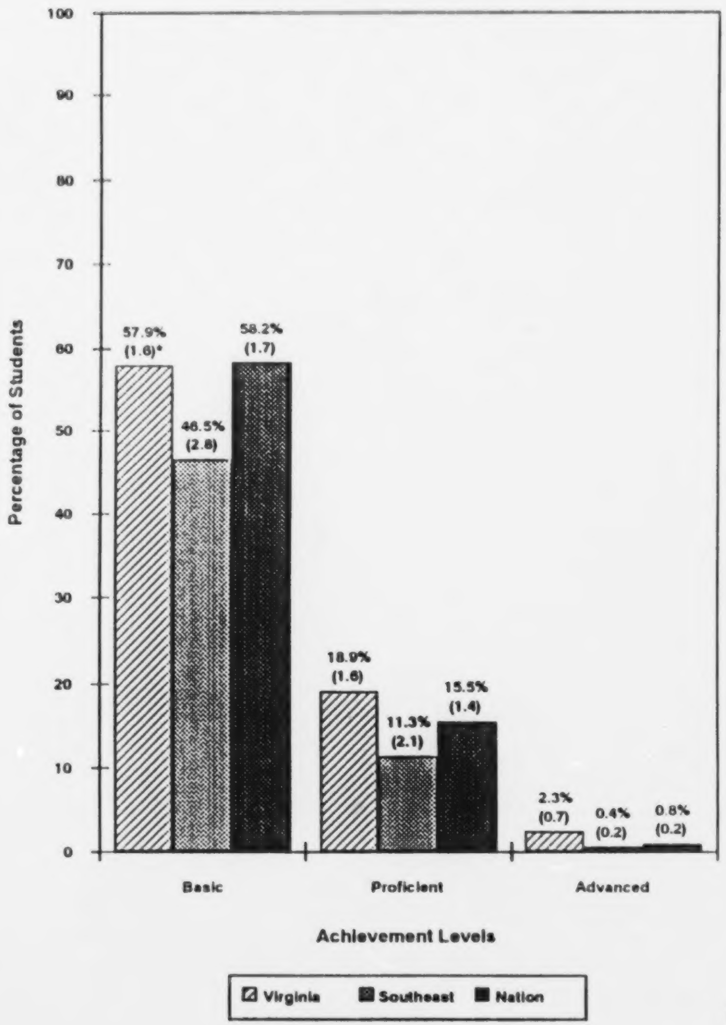


Figure 3.2-VA

Percentage of Students At or Above Grade 8 Achievement Levels for Virginia



* Standard errors are shown in parentheses

The results for Virginia have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[43] Tables 3.1-VA through 3.4-VA present these findings for Virginia and the most significant relationships are summarized below.

Male students in Virginia are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-VA). In most cases, outcomes for males and females in Virginia are similar to those for the nation as a whole and above those of their counterparts in the Southeast region.

Whites, Blacks, Hispanics, and Asian/Pacific Islanders are the major race/ethnic groups in Virginia. The percentage of Asian/Pacific Island students reaching the basic, proficient, and advanced levels is higher than that of the other race/ethnic groups (see Table 3.2-VA). White students have the second highest percentages at each of the three achievement levels. In most cases, the percentage of each race/ethnic group at or above each achievement level in Virginia is similar to its percentage for the nation as a whole.

In Virginia, students from advantaged urban communities are more likely to be at or above the basic, proficient, and advanced levels than those students from all other types of communities (see Table 3.3-VA). Students from disadvantaged urban and extreme rural communities in Virginia are the least likely to be at or above the basic and proficient levels. Results for students in each type of community in Virginia are not appreciably different from those of their regional and national counterparts.

In Virginia, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at each increment in the measure of parental education (see Table 3.4-VA). Students whose parents are college graduates are also more likely to be at or above the advanced level than other students. In Virginia, students whose parents are college graduates

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[43] See Appendix B for complete definitions of these subpopulations.

Table 3.1-VA

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Virginia

	GRADE 8 ACHIEVEMENT LEVEL		
GENDER	Basic	Proficient	Advanced
Male			
Virginia	58.5 (2.2)	20.5 (2.0)	3.0 (0.8)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Virginia	57.3 (1.6)	17.4 (1.6)	1.6 (0.7)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Virginia	57.9 (1.6)	18.9 (1.6)	2.3 (0.7)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-VA

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Virginia

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
White			
Virginia	67.5 (1.5)	23.7 (2.1)	2.5 (0.8)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Virginia	29.5 (2.3)	3.3 (0.9)	0.3 (0.2)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Virginia	35.2 (5.5)	7.9 (3.2)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Virginia	91.8 (3.8)	45.3 (5.7)	12.7 (4.2)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Virginia	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Virginia	57.9 (1.6)	18.9 (1.6)	2.3 (0.7)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-VA

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Virginia

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Virginia	79.2 (3.5)	36.1 (5.0)	6.7 (2.3)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Virginia †	35.8 (5.4)	7.0 (3.7)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Virginia	37.5 (3.0)	8.1 (2.8)	0.4 (0.4)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Virginia	54.7 (2.1)	14.9 (1.7)	1.0 (0.3)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Virginia	57.9 (1.6)	18.9 (1.6)	2.3 (0.7)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-VA

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Virginia

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Did Not Finish High School			
Virginia	28.0 (3.4)	1.8 (1.3)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Virginia	42.8 (2.1)	5.5 (1.0)	0.2 (0.2)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Virginia	65.1 (2.5)	18.1 (1.8)	0.9 (0.6)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Virginia	76.3 (2.0)	34.3 (2.7)	5.0 (1.5)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Virginia	57.9 (1.6)	18.9 (1.6)	2.3 (0.7)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

are more likely to be at or above the basic level than similar students in the Southeast region and more likely to be at or above the proficient and advanced levels than their counterparts across the region and the nation.

West Virginia

In West Virginia, 51.1 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-WV). This is very similar to the percentage for the Southeast region (53.5 percent), but significantly above the rate for the nation as a whole (41.8 percent). Almost two-fifths (39.1 percent) of the West Virginia students are performing at the basic level. Another 9.6 percent of the students in this state are able to satisfy the requirements set for the proficient level, while 0.2 percent meet the standards set for the advanced level.

Figure 3.2-WV and the tables for West Virginia present the information in terms of the percentages of students "at or above" each achievement level. Almost one-half (48.9 percent) of West Virginia's students are at or above the basic level. Nearly 10 percent are at or above the proficient level and 0.2 percent are at or above the advanced level. In each of the three cases, the percentages for the West Virginia students are similar to those for the Southeast region, but significantly below those for the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that less than one-half of West Virginia's Grade 8 students are likely to be able to use the correct operations for solving one- and two-step problems or have a conceptual understanding of place value or fractions. Moreover, about one-tenth (those at or above the proficient level) are likely to be able to be able to read, interpret or construct line or circle graphs, or identify simple algebraic expressions. Very few students can be expected to solve a wide range of practical problems involving percents, proportions, or exponents.

Figure 3.1-WV

Percentage of Students Below Basic and Within Each Achievement Level for West Virginia

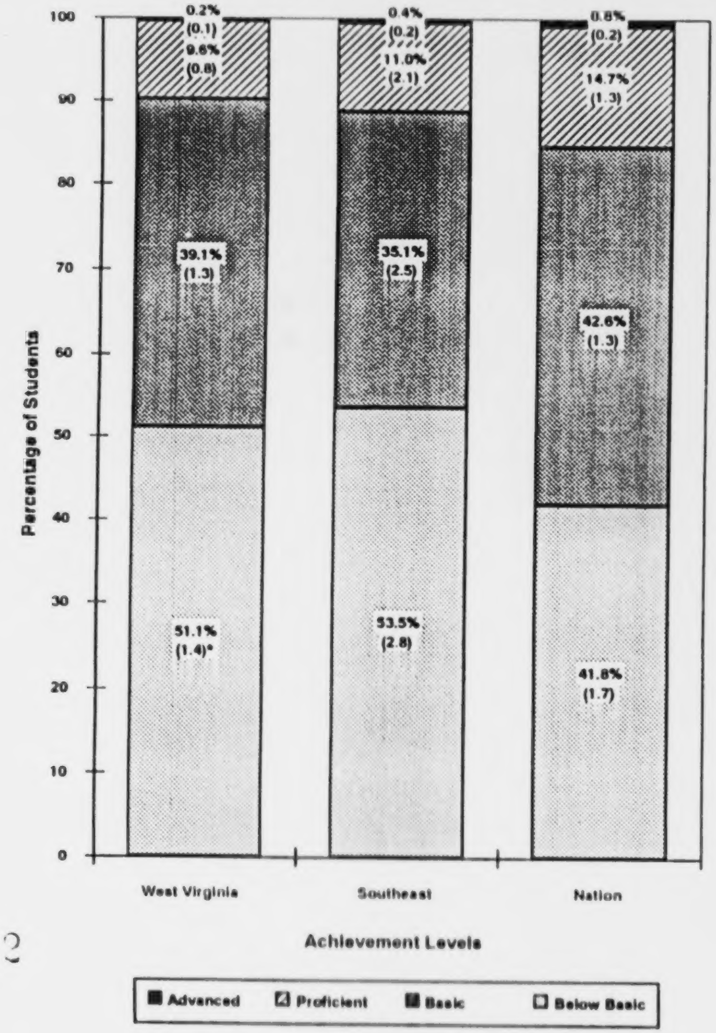
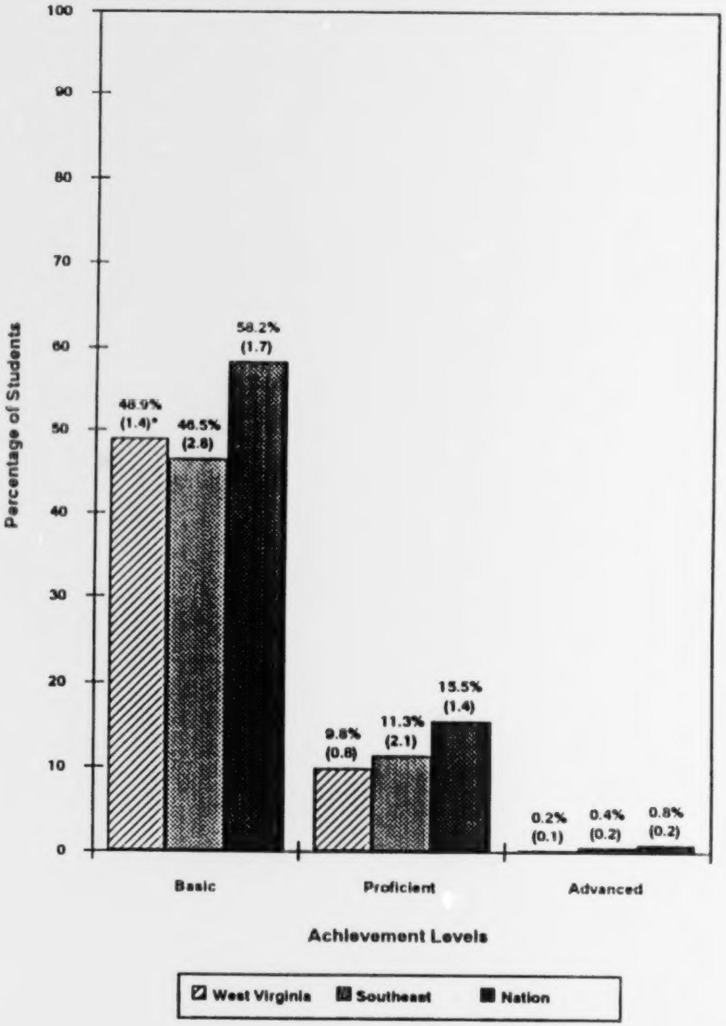


Figure 3.2-WV

Percentage of Students At or Above Grade 8 Achievement Levels for West Virginia



* Standard errors are shown in parentheses.

The results for West Virginia have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[44] Tables 3.1-WV through 3.4-WV present these findings for West Virginia and the most significant relationships are summarized below.

Male students in West Virginia are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-WV). Results for males and females in West Virginia are similar to those for their counterparts in the Southeast region, but below those for the nation as a whole in terms of the percentages at or above basic, proficient, and advanced levels.

Whites, Blacks and Hispanics are the major race/ethnic groups in West Virginia and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-WV). A smaller percentage of White and Hispanic students reach the basic level in West Virginia than the nation as a whole. White students in West Virginia are also less likely than White students throughout the nation to be at or above the proficient level.

In West Virginia, there are very few statistically significant differences in student performance across types of communities. Students in extreme rural communities in this state are less likely to be at or above the proficient level than students from "other" communities (see Table 3.3-WV). Students in "other" West Virginia communities, however, are less likely to be at or above the basic and proficient levels than their national counterparts.

In West Virginia, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic and proficient level at each increment in the measure of parental education (see Table 3.4-WV). At almost every level of parental education, students from West Virginia are about as likely to be at or above the basic and proficient levels as their regional or national

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[44] See Appendix B for complete definitions of these subpopulations.

Table 3.1-WV

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

West Virginia

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
West Virginia	49.8 (2.0)	11.1 (1.2)	0.2 (0.2)
Southeast	44.4 (3.2)	12.5 (2.6)	0.4 (0.4)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
West Virginia	47.9 (1.9)	8.4 (0.9)	0.1 (0.1)
Southeast	48.4 (3.1)	10.2 (2.3)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
West Virginia	48.9 (1.4)	9.8 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-WV

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

West Virginia

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
White			
West Virginia	51.2 (1.4)	10.3 (0.9)	0.2 (0.1)
Southeast	59.5 (3.2)	15.2 (3.3)	0.3 (0.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
West Virginia	20.0 (5.8)	2.7 (3.3)	0.0 (0.0)
Southeast	21.4 (3.5)	3.1 (1.7)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
West Virginia	19.9 (5.1)	2.3 (1.9)	0.0 (0.0)
Southeast	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
West Virginia	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
West Virginia	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
West Virginia	48.9 (1.4)	9.8 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-WV

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

West Virginia

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
West Virginia	*** (***)	*** (***)	*** (***)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
West Virginia †	54.4 (3.8)	7.9 (1.7)	0.3 (0.5)
Southeast	*** (***)	*** (***)	*** (***)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
West Virginia †	49.5 (2.5)	7.6 (1.2)	0.1 (0.0)
Southeast †	40.1 (12.7)	7.2 (5.3)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
West Virginia	47.9 (1.8)	10.7 (0.9)	0.2 (0.1)
Southeast	47.3 (3.1)	11.7 (2.4)	0.4 (0.2)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
West Virginia	48.9 (1.4)	9.8 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-WV

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

West Virginia

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
West Virginia	26.4 (3.1)	1.4 (1.0)	0.0 (0.0)
Southeast	21.0 (4.0)	0.7 (0.0)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
West Virginia	42.2 (1.7)	4.0 (0.7)	0.0 (0.0)
Southeast	38.3 (5.1)	5.0 (2.0)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
West Virginia	57.8 (2.8)	14.2 (2.4)	0.5 (0.4)
Southeast	55.5 (6.0)	13.1 (3.8)	0.0 (0.0)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
West Virginia	68.7 (2.3)	20.8 (1.8)	0.4 (0.3)
Southeast	67.3 (4.0)	23.2 (4.5)	1.1 (0.7)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
West Virginia	48.9 (1.4)	9.8 (0.8)	0.2 (0.1)
Southeast	46.5 (2.8)	11.3 (2.1)	0.4 (0.2)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

counterparts. West Virginia students whose parents' highest level of education is high school graduation, however, are less likely to be at or above the basic level than similar students in the nation as a whole.

Wisconsin

In Wisconsin, 25.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-WI). This is substantially better than the percentage for the Central region (35.9 percent) and for the nation as a whole (41.8 percent). Over half (50.4 percent) of the students in Wisconsin are performing at the basic level. Nearly one-fourth (23.2 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 1.4 percent meet the standards set for the advanced level.

Figure 3.2-WI and the tables for Wisconsin present the information in terms of the percentages of students "at or above" each achievement level. Seventy-five percent of Wisconsin students are at or above the basic level and nearly one-fourth (24.6 percent) of Wisconsin's Grade 8 students are at or above the proficient level. In both of these cases, the percentages for Wisconsin students are above that of students in the Central region and in the nation as a whole. In Grade 8, 1.4 percent of the students in Wisconsin reach the advanced level, a rate not significantly above the percentages those for the Central region or the nation as a whole.

These percentages at or above the basic, proficient, and advanced levels mean that three-fourths of the Grade 8 public school students in Wisconsin are likely to be able to interpret bar graphs, make conversions between units of measurement, and identify elementary geometric figures. The students at or above the proficient level can be expected to solve problems requiring decimals, fractions, and proportions, along with the translation of verbal problem situations into simple algebraic expressions. The 1.4 percent of the students at the advanced level are likely to be able to solve problems involving elementary concepts of probability.

Figure 3.1-WI

Percentage of Students Below Basic and Within Each Achievement Level for Wisconsin

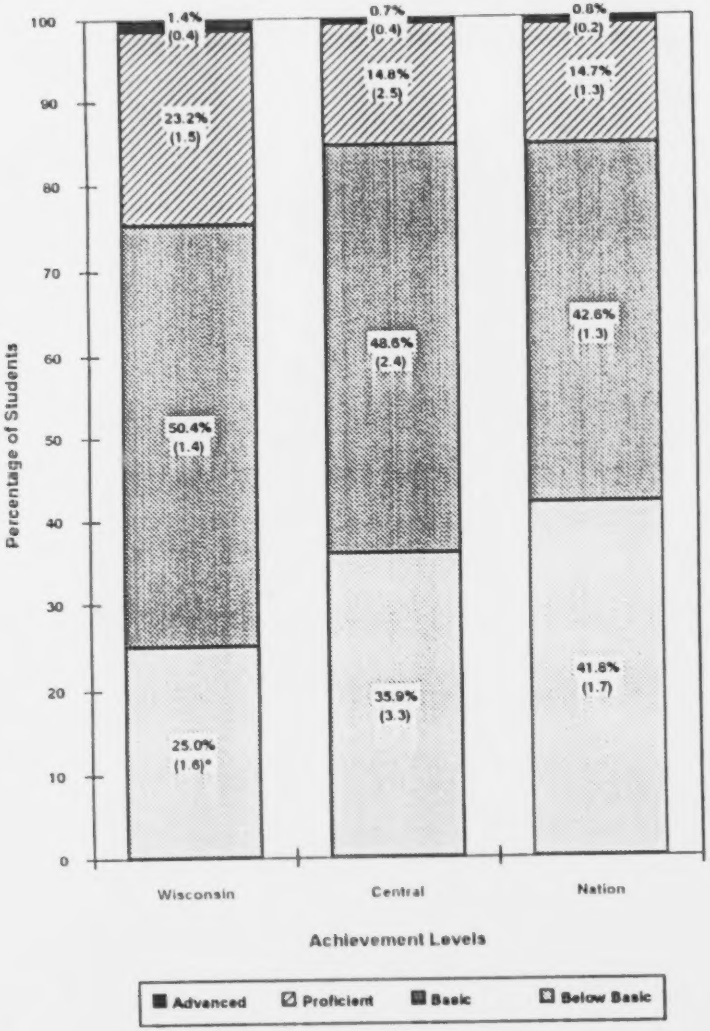
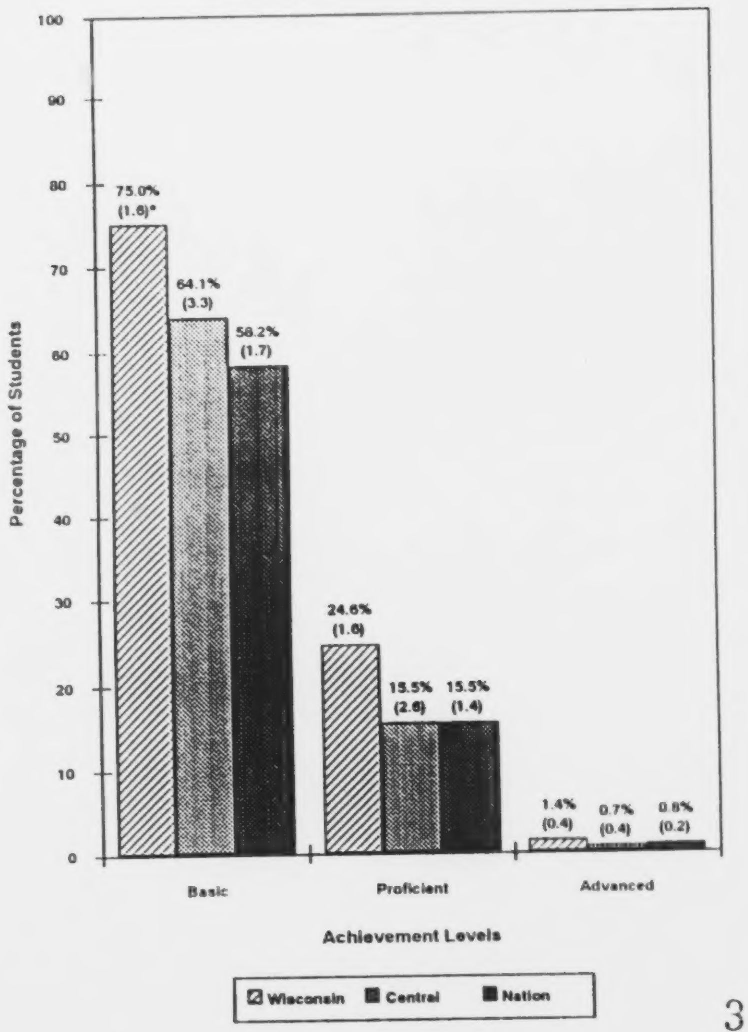


Figure 3.2-WI

Percentage of Students At or Above Grade 8 Achievement Levels for Wisconsin



* Standard errors are shown in parentheses

The results for Wisconsin have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[45] Tables 3.1-WI through 3.4-WI present these findings for Wisconsin and the most significant relationships are summarized below.

Male students in Wisconsin are no more likely than female students to be at or above the basic, proficient, or advanced levels (see Table 3.1-WI). Wisconsin students of both genders, however, are more likely than their national counterparts to be at or above the basic and proficient levels.

Whites, Blacks, and Hispanics are the major race/ethnic groups in Wisconsin and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-WI). The percentage of Hispanic students at or above the basic level is greater than the percentage of Black students. A larger percent of White students reach the basic and proficient levels in Wisconsin than in the Central region or the nation as a whole.

In Wisconsin, students from advantaged urban and extreme rural communities are more likely to be at or above the basic level than those students from all other types of community (see Table 3.3-WI). Students from disadvantaged urban communities in Wisconsin have the lowest percentages at or above the basic and proficient levels. Advantaged urban communities have the highest percentage at or above the proficient level. While the students from extreme rural communities matched the advantaged urban communities in terms of percentage at or above basic, they are significantly behind the advantaged urban communities in terms of percentage at or above proficient. Students from extreme rural and "other" communities in Wisconsin, however, are far more likely to be performing at or above the basic and proficient levels than students from similar communities across the nation.

In Wisconsin, as in the rest of the nation, student performance is strongly related to parental education. There are significant increases in the percentage of students at the basic

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[45] See Appendix B for complete definitions of these subpopulations.

Table 3.1-WI

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Wisconsin

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
Male			
Wisconsin	75.5 (1.9)	25.6 (1.8)	1.5 (0.4)
Central	63.5 (3.6)	18.6 (4.5)	1.2 (0.8)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Wisconsin	74.5 (2.0)	23.6 (2.0)	1.4 (0.4)
Central	64.7 (4.1)	12.5 (2.5)	0.3 (0.3)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Wisconsin	75.0 (1.6)	24.6 (1.6)	1.4 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

Table 3.2-WI

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Wisconsin

RACE/ETHNICITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	**Proficient**	**Advanced**
White			
Wisconsin	81.7 (1.4)	27.8 (1.7)	1.6 (0.4)
Central	72.9 (3.3)	18.8 (2.8)	0.9 (0.5)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Wisconsin	22.8 (6.6)	2.6 (1.5)	0.0 (0.0)
Central †	17.4 (3.0)	1.2 (1.2)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Wisconsin	46.1 (5.0)	5.3 (2.5)	0.2 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Wisconsin	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Wisconsin	*** (***)	*** (***)	*** (***)
Central	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Wisconsin	75.0 (1.6)	24.6 (1.6)	1.4 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-WI

Percentage of Students At or Above Achievement Levels By Type of Community 1990 NAEP Mathematics Assessment

Wisconsin

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Wisconsin †	90.1 (3.2)	42.3 (6.9)	4.0 (2.1)
Central	*** (***)	*** (***)	*** (***)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Wisconsin †	31.5 (5.2)	3.7 (1.7)	0.4 (0.0)
Central †	25.0 (7.5)	1.2 (0.9)	0.0 (0.0)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Wisconsin	85.1 (2.3)	22.5 (2.1)	0.3 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Wisconsin	76.8 (1.5)	27.3 (2.0)	1.8 (0.5)
Central	67.4 (4.2)	16.9 (2.9)	0.7 (0.4)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Wisconsin	75.0 (1.6)	24.6 (1.6)	1.4 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-WI

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Wisconsin

PARENTS' EDUCATION	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Did Not Finish High School			
Wisconsin	49.3 (4.8)	6.4 (2.7)	0.0 (0.0)
Central	*** (***)	*** (***)	*** (***)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Wisconsin	69.7 (2.2)	16.3 (2.3)	0.5 (0.3)
Central	59.1 (4.2)	10.8 (3.4)	0.2 (0.7)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Wisconsin	81.4 (1.7)	24.4 (2.2)	1.0 (0.6)
Central	70.8 (5.5)	18.4 (3.8)	1.7 (1.7)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Wisconsin	84.2 (1.8)	38.2 (2.4)	3.0 (0.9)
Central	73.4 (4.1)	21.8 (4.3)	0.9 (1.0)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Wisconsin	75.0 (1.6)	24.6 (1.6)	1.4 (0.4)
Central	64.1 (3.3)	15.5 (2.6)	0.7 (0.4)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

and proficient level at nearly every increment in the measure of parental education (see Table 3.4-WI). (The only exception is a nonsignificant difference in the percentage at or above basic for students whose parents are college graduates and those whose had some postsecondary education, but did not finish college.) Students in Wisconsin whose parents have college degrees are also more likely to be at or above the advanced level than those students whose parents have no formal education beyond high school. At almost every level of parental education, however, students from Wisconsin are more likely to reach the basic and proficient levels than their national counterparts. Wisconsin students whose parents are college graduates also have higher percentages at or above these two levels than similar students in the Central region.

Wyoming

In Wyoming, 26.0 percent of the students in Grade 8 do not reach the basic level (see Figure 3.1-WY). This is substantially better than the percentage for the West region (42.3 percent) and for the nation as a whole (41.8 percent). Over half (54.3 percent) of the students in Wyoming are performing at the basic level. Just under one-fifth (18.9 percent) of the students in this state are able to satisfy the requirements set for the proficient level, while 0.7 percent meet the standards set for the advanced level.

Figure 3.2-WY and the tables for Wyoming present the information in terms of the percentages of students "at or above" each achievement level. Seventy-four percent of Wyoming's students are at or above the basic level. This percentage is significantly greater than the comparable figures for students in the West region or in the nation as a whole. Just under one-fifth (19.7 percent) of Wyoming's Grade 8 students are at or above the proficient level. This is significantly greater than the national rate (15.5 percent). In Grade 8, 0.7 percent of the students in Wyoming reach the advanced level, a figure similar to the percentage for the nation as a whole and not significantly different from the percentage for the West region.

These percentages at or above the basic, proficient, and advanced levels mean that nearly three-fourths of the public school students in Wyoming can be expected to perform basic arithmetical operations, with or without a calculator. These same students are also likely to have a conceptual understanding of fundamental mathematical concepts such as place value, order of operations, and fractions. The 19.7 percent of the students at or above the proficient level can be expected to solve more complex problems, classify geometric figures based on their properties, and show an understanding of the basic concepts of probability.

Figure 3.1-WY

Percentage of Students Below Basic and Within Each Achievement Level for Wyoming

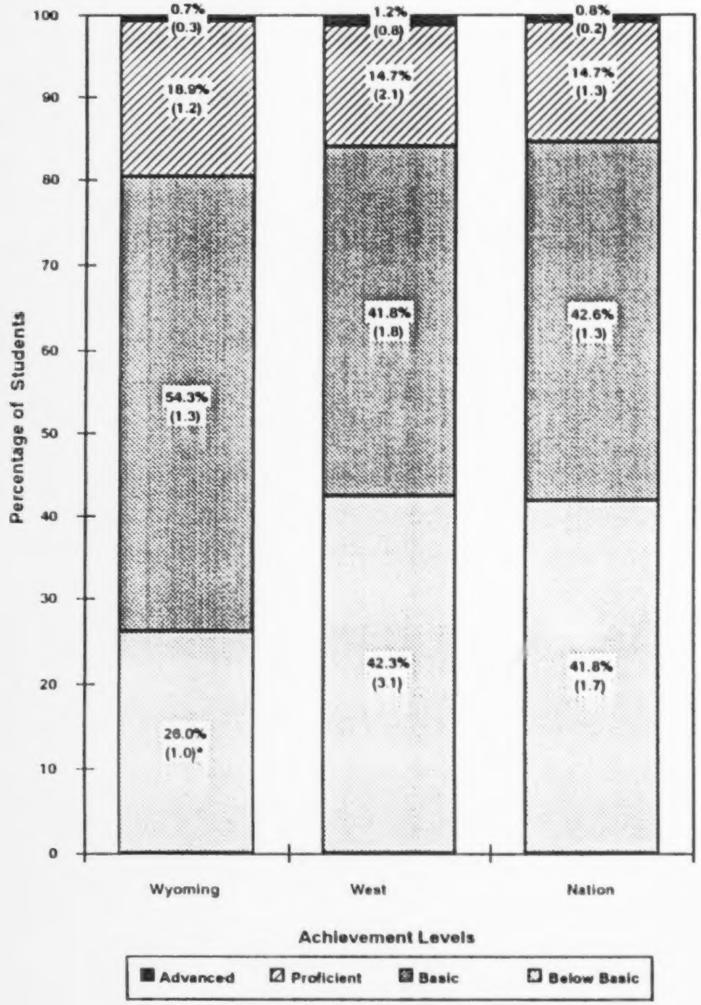
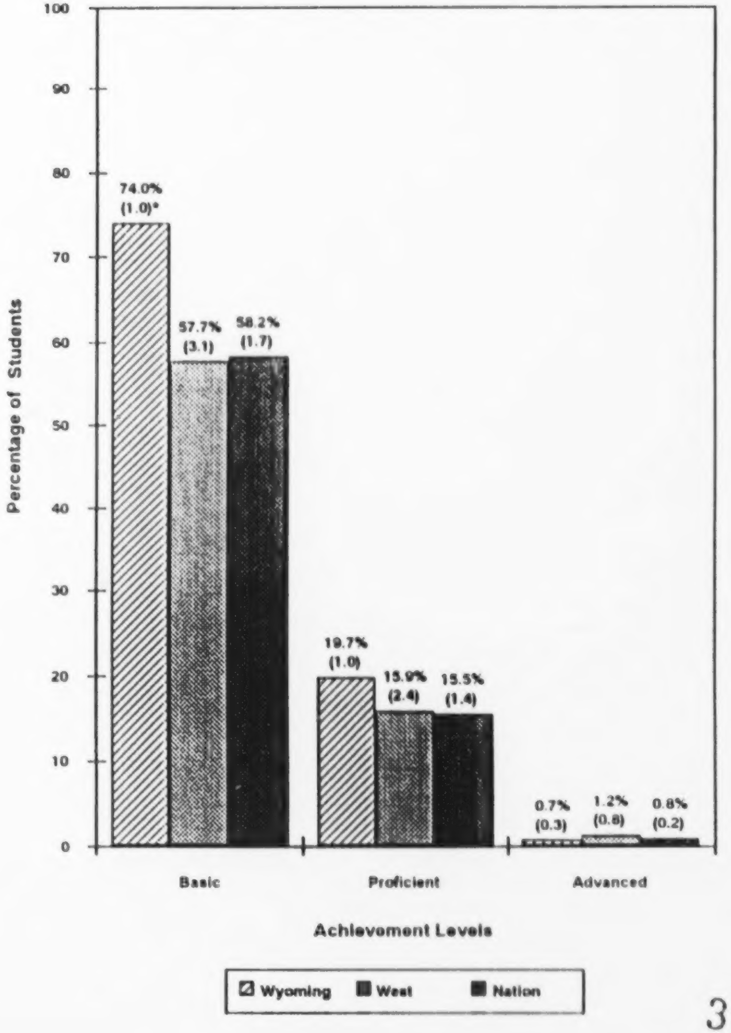


Figure 3.2-WY

Percentage of Students At or Above Grade 8 Achievement Levels for Wyoming



* Standard errors are shown in parentheses

The small percentage of students at the advanced level are likely to have a solid conceptual understanding of the interrelationships among fractions, decimals, and percents. They can able be expected to use scale drawings and solve problems involving concepts of probability.

The results for Wyoming have also been tabulated by gender, race/ethnicity, type of community, and parents' education.[46] Tables 3.1-WY through 3.4-WY present these findings for Wyoming and the most significant relationships are summarized below.

Male students in Wyoming are more likely than female students to be at or above the basic and proficient levels (see Table 3.1-WY). There is no significant difference, however, in the percentages of males and females at or above the advanced level. Wyoming students of both genders are far more likely than their regional or national counterparts to be at or above the basic level, and males in Wyoming are more likely to be at or above the proficient level than males in the entire nation.

Whites, Hispanics, and American Indians are the major race/ethnic groups in Wyoming and the percentage of White students reaching the basic and proficient levels is higher than that of the other race/ethnic groups (see Table 3.2-WY). A larger percent of White and Hispanic students reach the basic level in Wyoming than in the West region or the nation as a whole.

In Wyoming, there are no statistically significant differences in the performance of students from extreme rural and "other" communities, the two types of community with sufficient cases for analysis (see Table 3.3-WY). Wyoming students from both types of communities, however, are far more likely to be performing at or above the basic and proficient levels than students from similar communities across the region and throughout the nation.

In Wyoming, as in the rest of the nation, student performance is strongly related to parental education. Students in Wyoming whose parents have some schooling beyond high

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[46] See Appendix B for complete definitions of these subpopulations.

Table 3.1-WY

Percentage of Students At or Above Achievement Levels
By Gender
1990 NAEP Mathematics Assessment

Wyoming

GENDER	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Male			
Wyoming	76.3 (1.4)	23.0 (1.5)	1.2 (0.5)
West	59.7 (4.2)	17.1 (2.9)	1.5 (1.1)
Nation	58.1 (2.2)	17.6 (1.9)	1.1 (0.4)
Female			
Wyoming	71.7 (1.5)	16.2 (1.1)	0.2 (0.2)
West	55.2 (3.3)	14.4 (2.2)	0.8 (0.6)
Nation	58.2 (1.7)	13.3 (1.3)	0.5 (0.3)
Total			
Wyoming	74.0 (1.0)	19.7 (1.0)	0.7 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

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Table 3.2-WY

Percentage of Students At or Above Achievement Levels
By Race/Ethnicity
1990 NAEP Mathematics Assessment

Wyoming

	GRADE 8 ACHIEVEMENT LEVEL		
RACE/ETHNICITY	Basic	Proficient	Advanced
White			
Wyoming	77.7 (1.1)	21.7 (1.1)	0.8 (0.3)
West	68.4 (3.8)	20.4 (3.3)	1.7 (1.2)
Nation	68.7 (2.0)	19.4 (1.7)	1.1 (0.4)
Black			
Wyoming	*** (***)	*** (***)	*** (***)
West †	38.7 (11.8)	8.0 (4.8)	0.0 (0.0)
Nation	24.9 (2.5)	3.7 (1.4)	0.0 (0.0)
Hispanic			
Wyoming	48.8 (4.6)	6.6 (2.0)	0.0 (0.0)
West	34.5 (5.1)	4.7 (1.7)	0.0 (0.0)
Nation	34.4 (4.3)	4.1 (1.4)	0.0 (0.0)
Asian/Pacific Islander			
Wyoming	*** (***)	*** (***)	*** (***)
West	*** (***)	*** (***)	*** (***)
Nation †	76.6 (6.0)	38.1 (5.8)	3.4 (1.8)
American Indian			
Wyoming	54.9 (4.7)	6.0 (3.1)	0.0 (0.0)
West	*** (***)	*** (***)	*** (***)
Nation †	39.3 (14.9)	2.8 (2.7)	0.0 (0.0)
Total			
Wyoming	74.0 (1.0)	19.7 (1.0)	0.7 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.3-WY

Percentage of Students At or Above Achievement Levels
By Type of Community
1990 NAEP Mathematics Assessment

Wyoming

TYPE OF COMMUNITY	GRADE 8 ACHIEVEMENT LEVEL		
	Basic	Proficient	Advanced
Advantaged Urban			
Wyoming	*** (***)	*** (***)	*** (***)
West †	80.4 (2.8)	36.4 (4.0)	4.5 (5.6)
Nation †	80.4 (4.2)	32.2 (5.7)	3.3 (2.6)
Disadvantaged Urban			
Wyoming	*** (***)	*** (***)	*** (***)
West †	51.1 (8.5)	11.8 (3.8)	0.5 (0.6)
Nation †	41.4 (5.0)	8.8 (2.3)	0.3 (0.4)
Extreme Rural			
Wyoming	79.2 (1.8)	23.5 (2.4)	0.5 (0.3)
West †	46.2 (13.0)	8.0 (5.1)	0.0 (0.0)
Nation †	50.1 (6.7)	8.8 (2.3)	0.3 (0.6)
Other			
Wyoming	74.8 (1.3)	19.8 (1.2)	0.9 (0.4)
West	56.1 (4.6)	13.4 (1.9)	0.7 (0.7)
Nation	58.8 (2.2)	15.2 (1.4)	0.7 (0.2)
Total			
Wyoming	74.0 (1.0)	19.7 (1.0)	0.7 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable.

† Interpret with caution--the nature of the sample does not allow accurate determination of the variability of the results for this subgroup.

*** Sample size insufficient to permit reliable estimate. There were fewer than 62 students.

Table 3.4-WY

Percentage of Students At or Above Achievement Levels
By Parents' Education
1990 NAEP Mathematics Assessment

Wyoming

	GRADE 8 ACHIEVEMENT LEVEL		
PARENTS' EDUCATION	**Basic**	**Proficient**	**Advanced**
Did Not Finish High School			
Wyoming	54.1 (5.3)	3.3 (2.3)	0.0 (0.0)
West	36.9 (7.6)	2.6 (2.3)	0.0 (0.0)
Nation	30.8 (3.4)	2.0 (0.9)	0.0 (0.0)
Graduated High School			
Wyoming	61.5 (2.4)	9.2 (1.6)	0.1 (0.1)
West	45.4 (3.9)	4.0 (2.2)	0.0 (0.0)
Nation	49.4 (2.5)	7.1 (1.5)	0.1 (0.3)
Some Education After High School			
Wyoming	84.3 (1.6)	19.5 (2.1)	0.6 (0.5)
West	68.7 (4.7)	18.9 (3.9)	1.8 (1.6)
Nation	65.4 (2.6)	16.9 (1.8)	1.2 (0.7)
Graduated College			
Wyoming	83.2 (1.3)	29.7 (1.9)	1.4 (0.5)
West	71.3 (3.3)	25.9 (3.2)	1.9 (1.4)
Nation	73.8 (2.1)	25.9 (2.2)	1.5 (0.5)
Total			
Wyoming	74.0 (1.0)	19.7 (1.0)	0.7 (0.3)
West	57.7 (3.1)	15.9 (2.4)	1.2 (0.8)
Nation	58.2 (1.7)	15.5 (1.4)	0.8 (0.2)

The standard errors of the estimated percentages appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample. When the proportion of students is either 0 percent or 100 percent, the standard error is inestimable. Not all students were able to report parents' education. Thirty-five percent of the students in Grade 4, 8 percent of the students in Grade 8, and 2 percent of the students in Grade 12 responded "I don't know" when asked about parents' highest level of education. Data for these students, however, are included in the "totals" for each grade.

school (college degrees or some education after high school) are more likely to reach the basic level than those students whose parents did not go beyond high school (see Table 3.4-WY). There are significant increases in the percentage of students at the proficient level at each increment in the measure of parental education. Students whose parents graduated from college are also more likely to be at the advanced level than those students whose parents did not continue their formal education beyond high school. At almost every level of parental education, however, students from Wyoming are more likely to reach the basic level than their national or regional counterparts.

Appendices

Appendix A

The Framework for the 1990 Mathematics Assessment

The 1990 Mathematics Assessment Framework consists of three mathematical abilities (conceptual understanding, procedural knowledge, and problem solving) and five content areas (numbers and operations; measurement; geometry; data analysis, statistics and probability; and algebra and functions). The category of Conceptual Understanding includes abilities such as the use of models, diagrams, and symbols and the identification and application of principles. Procedural Knowledge is defined as the ability to select and apply appropriate procedures and verify the correctness of applications and procedures. Problem Solving incorporates the recognition and formulation of problems; the extension and modification of procedures; and the understanding of data sufficiency and consistency.

The five content areas are drawn from elementary and secondary school mathematics including the study of elementary functions, but not including calculus which is generally considered a college-level mathematics course. Numbers and Operations topics include: reading, writing, and comparing numbers; applications of ratios proportions and percents; and use of elementary number theory. Measurement focuses on students' ability to describe real-world objects using numbers. Geometry items highlight the knowledge of geometric figures and relationships as well as students' skills in working with this knowledge. Questions on Data Analysis, Statistics, and Probability emphasize methods for gathering, presenting, and evaluating data. Algebra and Functions covers algebraic expressions, elementary functions (pre-calculus), trigonometry, and some topics from discrete mathematics. The coverage of the NAEP assessment is meant to be broad, and the distribution of topics into content areas is designed to ensure a balanced and complete assessment for each grade level. The consensus process used to select the items takes into consideration what is being taught in the classroom as well as what is recommended for the classroom use. The recommended distributions of assessment items across mathematical abilities and content areas are presented below.

Table A.1

Percentage Distribution of Assessment Items by Mathematical Ability and Content Area

Mathematical Ability	Grade 4	Grade 8	Grade 12
Conceptual Understanding	40	40	40
Procedural Knowledge	30	30	30
Problem Solving	30	30	30

Content Area	Grade 4	Grade 8	Grade 12
Numbers and Operations	45	30	25
Measurement	20	15	15
Geometry	15	20	20
Data Analysis, Statistics and Probability	10	15	15
Algebra and Functions	10	20	25

Appendix B

Drawing Inferences from NAEP

Since NAEP is based on a sample of students, the actual values for the entire population may differ from those measured in the assessment. Therefore, the standard error of each measure is used to set confidence limits around each reported value. Approximately 95 times out of 100, the true value will fall within two standard errors of the sample value. The standard errors are reported in parentheses for each statistic.

A slightly different procedure is used to compare the difference between two sample statistics. The magnitude of the difference between the two statistics is evaluated using "standard error of the difference." This is the square root of the sum of the each squared standard error. Only those differences greater than two standard errors of the difference are described in the text.[47]

Data are not provided for subgroups with very small sample sizes. Following procedures used in other presentations of 1990 NAEP data, a minimum of 62 cases is required for presentation. (This is the minimum number of cases required to detect an effect of .2 at the 5 percent significance level, with a probability of .8 or more.)

In addition, there are other situations where the estimates for certain subpopulations need to be interpreted cautiously. In some cases, such as those where the standard errors are calculated from a small sample of students or the students are concentrated in a small number of schools, the amount of uncertainty associated with the standard errors may be large. In its preparation of the NAEP data, the Educational Testing Service has identified a set of cases in which the sampling error cannot be estimated accurately because the coefficient of variation of estimated number of students exceeds 20 percent. These situations are indicated by the "†" in the tables presented in this report.

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[47] For further information, see Ina V.S. Mullis, John A. Dossey, Eugene H. Owen, and Gary W. Phillips (1991) *The STATE of Mathematics Achievement: NAEP's 1990 Assessment of the Nation and Trial Assessment of the States*, Washington, D.C.: National Center for Education Statistics, Appendix C and Eugene G. Johnson (1989) "Considerations and Techniques for the Analysis of NAEP Data, *Journal of Educational Statistics 14 (Winter): 303-334.*

Appendix C
NAEP Reporting Groups

This report contains results for the nation, participating states, and subpopulations of students defined by shared characteristics. The definitions used for classifications by race/ethnicity, size and type of community, parents' education level, gender, and region are the same as those used in other reports based on NAEP's 1990 Mathematics Assessment.[48]

Race/Ethnicity. Results are presented for students of different racial/ethnic groups based on the students' self-identification of race/ethnicity according to the following mutually exclusive categories: White, Black, Hispanic, Asian/Pacific Islander, and American Indian (including Alaskan Native). At least 62 students in a particular subpopulation must participate in order for the results for that subpopulation to be considered reliable. State results for racial/ethnic groups with fewer than 62 students are not reported. However, the data for all students, regardless of whether their racial/ethnic group was reported separately, were included in computing the overall national or state level results.

Type of Community. Results are provided for four mutually exclusive community types -- advantaged urban, disadvantaged urban, extreme rural, and other -- as described below.

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[48] See, for example, Ina V.S. Mullis, John A. Dossey, Eugene H. Owen and Gary W. Phillips (1991) *The STATE of Mathematics Achievement, NAEP's 1990 Assessment of the Nation and the Trial Assessment of the States*, Washington, DC: National Center for Education Statistics.

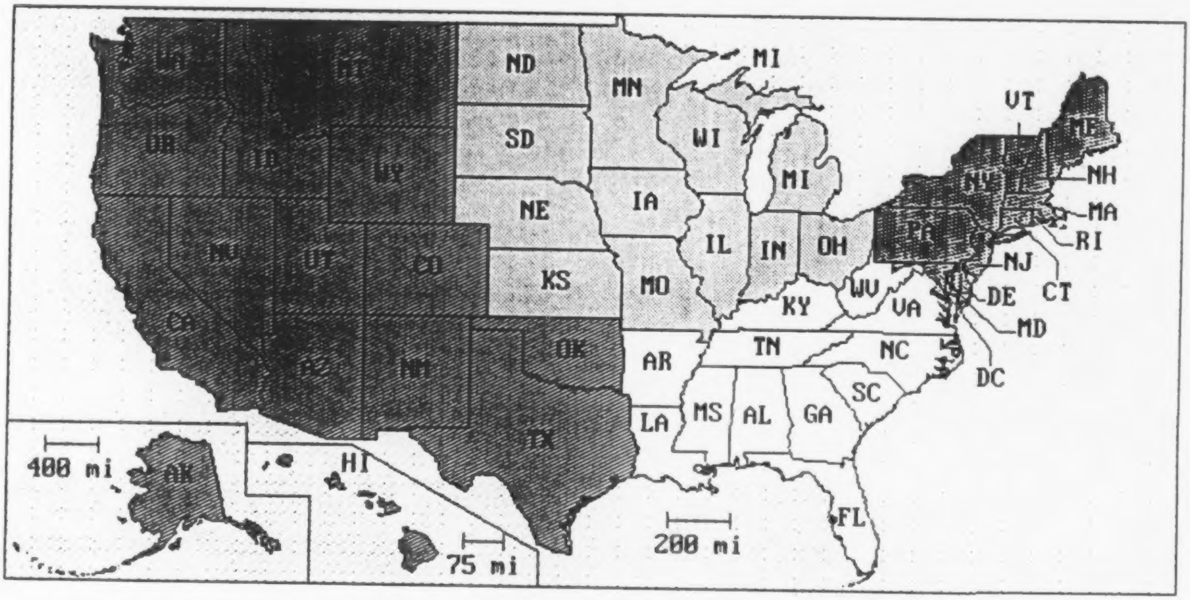
Advantaged Urban:	Students in this group reside in metropolitan statistical areas and attend schools where a high proportion of the students' parents are in professional or managerial positions.
Disadvantaged Urban:	Students in this group reside in metropolitan statistical areas and attend schools where a high proportion of the students' parents are on welfare or are not regularly employed.
Extreme Rural:	Students in this group do not reside in metropolitan statistical areas. They attend schools in areas with a population below 10,000 where many of the students' parents are farmers or farm workers.
Other:	Students in the "Other" category attend schools in areas other than those defined as advantaged urban, disadvantaged urban, or extreme rural.

The information about parents' occupation was obtained from the Principal's Questionnaire completed by each sampled school. The reporting of results by each type of community was also subject to a minimum student sample size of 62.

Parents' Education Level. Students were asked to report the extent of schooling for each of their parents using one of four categories: did not finish high school, graduated high school, had some education after high school, or graduated college. The response indicating the higher level of education for either parent was selected for reporting.

Gender. Results are reported separately for males and females. Gender was reported by the student.

Region. The United States has been divided into four regions: Northeast, Southeast, Central, and West. States in each region are shown on the following map. (The northern section of Virginia was also included in the Northeast region.)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Acknowledgments

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>
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